Content

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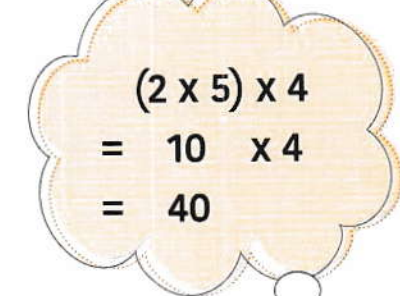
Chapter 1

Pacing Guide

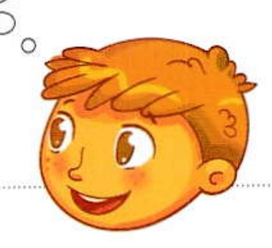
Lesson	Instructional Focus	Key vocabulary
Lesson 61	**Associative property** • Explain the associative property of multiplication. • Apply the associative property of multiplication to solve problems. • Collaborate to define math terminology in their own words.	• Associative property of multiplication • Factors • Parentheses • Product
Lesson 62	**Distributive property** • Explain the distributive property of multiplication. • Apply the distributive property of multiplication to solve problems. • Collaborate to define math terminology in their own words.	• Addend • Bar model • Distributive property of multiplication
Lesson 63	**Estimating the product** • Apply strategies to estimate products. • Apply properties and strategies to solve multiplication problems. • Explain chosen problem-solving strategies.	• Estimation • Reasonableness
Lessons 64 & 65	**The relationship between multiplication and division** • Explain the relationship between multiplication and division. • Solve multiplication and division problems with an unknown number. • Explain how they can use the relationship between multiplication and division to solve problems. • Identify a variety of multiplication and division problem-solving strategies. • Apply more than one strategy to solve multiplication and division problems with an unknown number. • Justify the use of preferred problem-solving strategies.	• Fact family • Hour • Inverse • Minute • Quotient • Justify • Product • Quotient • Strategies
Lesson 66	**(A) The perimeter of a square** • Solve perimeter problems involving an unknown side length. **(B) The perimeter of a rectangle** • Solve perimeter problems involving unknown length or width.	• Length • Parallel • Perimeter • Width
Lesson 67	**Applying multiple strategies to solve two-step story problems** • Solve two-step story problems involving addition, subtraction, multiplication, or division. • Explain the strategies they use to solve complex story problems. • Analyze solutions to two-step story problems to identify and explain the errors made. • Explain the benefits of error analysis in improving thinking and learning.	• Associative Property • Perseverance
Lesson 68	**Checking the error in two-step story problems** • Analyze errors made by others. • Find the correct solution.	
Lessons 69 & 70	**More applications on solving two-step story problems** • Apply multiple strategies to solve two-step story problems. • Justify problem-solving strategies. • Write two-step story problems involving any operation. • Solve two-step story problems.	

Associative property

- How can we find the product of 2 x 5 x 4?



2 x (5 x 4)
= 2 x 20
= 40



- The two students got the same result using different order. So, it doesn't matter which two numbers will be multiplied first. And this is called **Associative property**.

Remember

- We use ( ) to select which two numbers we will start with to multiply.

Connect:

- Help your child to revise geometry by determining area and discussing why it is important that square tiles that cover a shape are of equal size and do not overlap.

Activity 1 Complete the missing numbers using the associative property:

Example

(4 x 6) x **3** = 4 x (6 x 3)

a)

(2 x ......) x 5 = 2 x (9 x 5)

b)

6 x (7 x 4) = (6 x ......) x 4

c)

...... x (8 x 2) = (5 x 8) x 2

Activity 2 Solve by using the associative property:

Example

(2 x 4) x 5 = 2 x (**4** x **5**)

8 x 5 = 2 x **20**

40 = **40**

a)

5 x (2 x 6) = (5 x 2) x 6

5 x ...... = ... x 6

...... = ...

b)

10 x (4 x 2) = (10 x 4) x 2

...... x ...... = ... x ......

...... = ...

c)

(7 x ......) x 2 = 7 x (1 x ......)

...... x ...... = ... x ......

...... = ...

Parents' Tips:

- Make sure that your child understands how to solve multiplication problems using the associative property.

Activity 3 Tick the equations that have the same value:

Example

$7 \times 2 \times 5 =$ ......

1) 7 x (2 x 5) (✓)
2) 7 x 7 (......)
3) (7 x 2) x 5 (✓)
4) 7 x 10 (✓)

a) $(8 \times 5) \times 2 =$ ......

1) 8 x (5 x 2) (......)
2) 8 x (5 x 3) (......)
3) 27 x 2 (......)
4) 40 x 2 (......)

b) $(6 \times 2) \times 4 =$ ......

1) (6 x 4) x 2 (......)
2) 6 x (2 x 4) (......)
3) 6 x 6 (......)
4) 6 x 8 (......)

c) $5 \times (2 \times 5) =$ ......

1) 25 x 10 (......)
2) 5 x 10 (......)
3) 25 + 2 (......)
4) (5 x 2) x 5 (......)

d) $8 \times (3 \times 10) =$ ......

1) 8 x 13 (......)
2) (8 x 3) x 10 (......)
3) 24 x 30 (......)
4) 240 (......)

e) $(6 \times 10) \times 7 =$ ......

1) 42 x 10 (......)
2) 6 x (10 x 7) (......)
3) 60 x 7 (......)
4) 420 (......)

Parents' Tips:

- Make sure that your child understands that (   ) tells us which 2 factors we need to multiply first.

Read and solve:

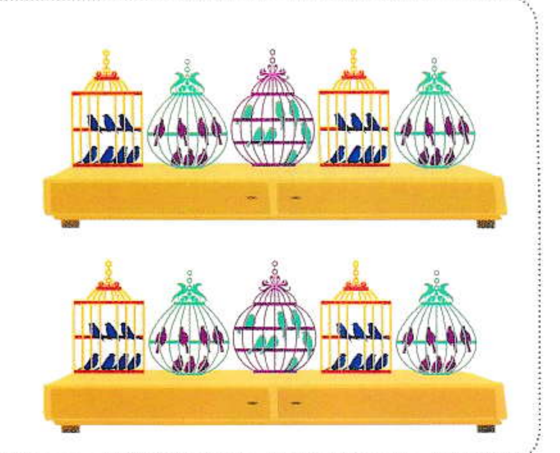
Example

There are 2 tables, with 5 cages, each cage has 7 birds.
What is the total number of birds?

7 x (5 x 2)

7 x 10 = 70 birds

The total number of birds is 70 birds.

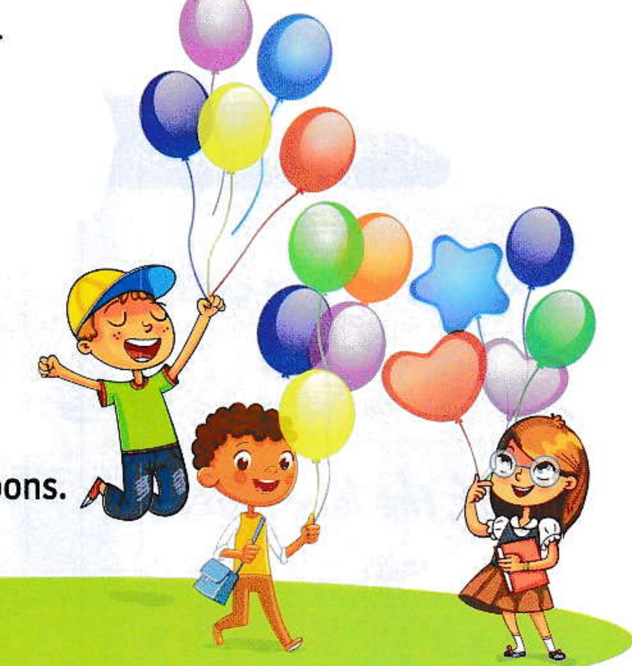


- Adel, Ahmed and Sally are 3 brothers. Every day, each one of them buys 5 balloons. How many balloons do they buy in 10 days?

– ....

– ....

The number of balloons = ... balloons.



I learned

- The meaning of the associative property of multiplication.
- Applying the associative property of multiplication to solve problems.

Distributive property

How can we multiply 8 x 3 using different ways?

There are 8 groups of with 3 in each.

We can use breaking apart strategy to solve 8 x 3

First way:

4 groups of 3

4 groups of 3

Break the large factor 8 into 4 + 4

$8 \times 3 = (4 + 4) \times 3$

$(4 \times 3) + (4 \times 3)$

$12 + 12$

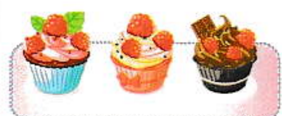
$= 24$

So, $8 \times 3 = 24$

Second way:

5 groups of 3

3 groups of 3



Break the large factor 8 into 5 + 3

$8 \times 3 = (5 + 3) \times 3$

$(5 \times 3) + (3 \times 3)$

$15 + 9$

$= 24$

So, $8 \times 3 = 24$

Connect:

- Revise with your child, how to figure out the best strategy and the best operation to solve a story problem involving 2-step operations.

Activity 1 Complete to find the product as the example:

Example

2×6

$2 \times 6 = 2 \times (3 + 3)$
$= (2 \times 3) + (2 \times 3)$
$= 6 + 6$
$= 12$

(6) → (3) (3)

Or

$2 \times 6 = 2 \times (2 + 4)$
$= (2 \times 2) + (2 \times 4)$
$= 4 + 8$
$= 12$

(6) → (2) (4)

a) 3×9

3 x 9 = 3 x (··· + ···)
= (··· x ···) + (··· x ···)
= ····· + ·····
= ·····

(9) → (····) (····)

Or

3 x 9 = 3 x (··· + ···)
= (··· x ···) + (··· x ···)
= ····· + ·····
= ·····

(9) → (····) (····)

b) 4×7

4 x 7 = 4 x (··· + ···)
= (··· x ···) + (··· x ···)
= ····· + ·····
= ·····

(····) → (····) (····)

Or

4 x 7 = 4 x (··· + ···)
= (··· x ···) + (··· x ···)
= ····· + ·····
= ·····

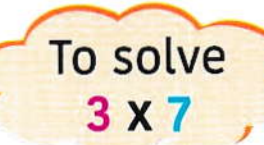
(····) → (····) (····)

Parents' Tips:

- Explain to your child that he/she can break down the larger factor using different ways as 6 can be broken down into (5 + 1) Or (4 + 2) Or (3 + 3).

Bar model:

It is a bar used to help us to solve multiplication problems by breaking a big factor into two smaller factors to represent the distributive property in multiplication.



Step (1) Draw a long bar broken into 7 groups of 3.

3	3	3	3	3	3	3

Step (2) Break the bar into 2 smaller parts.

3	3	3	3	3	3	3

(3 x 4) + (3 x 3)

Step (3) Add the product of the 2 parts.

12 + 9 = 21

Activity 2

Color to break the following bar models into two smaller parts:

Example

2 x 6

2	2	2	2	2	2

2 x 6 = 2 x (3 + 3)

a) **5 x 9**

5	5	5	5	5	5	5	5	5

5 x 9 = 5 x (..... + ...)

b) **6 x 7**

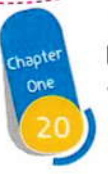
6	6	6	6	6	6	6

6 x 7 = 6 x (..... + ...)

c) **4 x 8**

4	4	4	4	4	4	4	4

4 x 8 = 4 x (..... + ...)



Parents' Tips:

- Help your child to use the bar models in solving the multiplication equation using the distributive property.

Activity 3

Draw a bar model to solve each of the given problems using the distributive property:

Example

7	7	7	7	7	7	7	7	7

$7 \times 9 = 7 \times (5 + 4)$
$= (7 \times 5) + (7 \times 4)$
$= 35 + 28$
$= 63$

a)

$2 \times 5 = 2 \times (\ldots + \ldots)$
$= (2 \times \ldots) + (2 \times \ldots)$
$= \ldots + \ldots$
$= \ldots$

b)

$3 \times 11 = 3 \times (\ldots + \ldots)$
$= (\ldots \times \ldots) + (\ldots \times \ldots)$
$= \ldots + \ldots$
$= \ldots$

c)

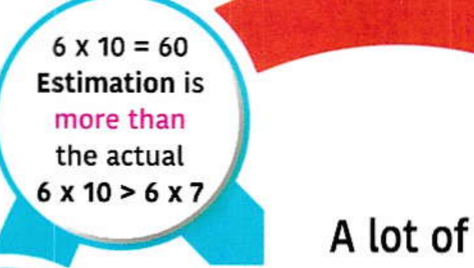
$5 \times 15 = 5 \times (\ldots + \ldots)$
$= (\ldots \times \ldots) + (\ldots \times \ldots)$
$= \ldots + \ldots$
$= \ldots$

I learned

- The meaning of the distributive property of multiplication.
- How to apply the distributive property of multiplication in solving problems.

Estimating the product

- How can we get an estimation of 6×7 to the actual product?



$6 \times 10 = 60$
Estimation is more than the actual
$6 \times 10 > 6 \times 7$

$5 \times 7 = 35$
Estimation is less than the actual
$5 \times 7 < 6 \times 7$

$6 \times 6 = 36$
Estimation is less than the actual
$6 \times 6 < 6 \times 7$
most suitable estimation to 42

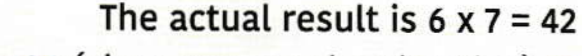
A lot of possibilities and strategies can be used *to estimate*

$7 \times 10 = 70$
Estimation is more than the actual
$7 \times 10 > 6 \times 7$

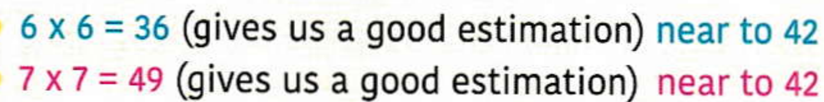
$5 \times 5 = 25$
Estimation is less than the actual
$5 \times 5 < 6 \times 7$
not suitable estimation to 42

Think

$7 \times 7 = 49$
Estimation is more than the actual
$7 \times 7 > 6 \times 7$



The actual result is $6 \times 7 = 42$



- $6 \times 6 = 36$ (gives us a good estimation) near to 42
- $7 \times 7 = 49$ (gives us a good estimation) near to 42

Connect:

- Revise with your child how to explore the associative and distributive properties of multiplication to solve problems and to form equations.

Activity 1 Estimate the product, then find the actual result:

Example

5×9

The estimated product is less than 50

because:

5 x 10 = 50

The actual result:

5 x 9 = 5 x (4 + 5)
= (5 x 4) + (5 x 5)
= 20 + 25
= 45

6×11

a)

The estimated product

is ....

because:

.... x .... = ...

The actual result:

6 x 11 = ...

4×8

b)

The estimated product

is ....

because:

.... x .... = ...

The actual result:

4 x 8 = ...

Parents' Tips:

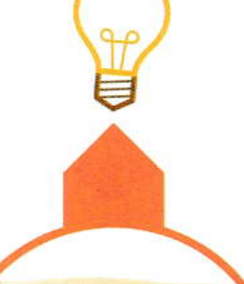
- Help your child to reach the nearest estimation to the actual result of multiplying 2 numbers.

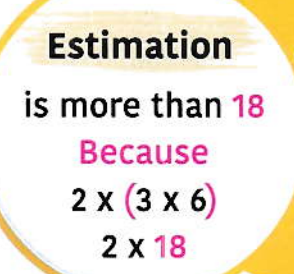
• How can we estimate the product of multiplying 3 numbers?

To estimate the product of

$2 \times 3 \times 6$

Think





Estimation
is more than 18
Because
2 x (3 x 6)
2 x 18

Estimation
is more than 6
Because
(2 x 3) x 6
6 x 6

Estimation
is more than 12
Because
(2 x 6) x 3
12 x 3

Estimation:

is a strategy used to help us find the closest result or the nearest to the actual one.

Actual result

2 x 3 x 6 = 36

• We found that 2 x (3 x 6) = 36

= 2 x 18 = 36

So, we multiply the biggest 2 factors to reach the closest estimation to the actual result.

Parents' Tips:
- Help your child to use the estimation strategy to reach the nearest product, while solving multiplying 3 numbers problems.

Estimate the product, then find the actual result:

Example $5 \times 8 \times 4$

The estimated product is more than 40
because: (5 x 8) x 4
40 x 4

The actual result:
(5 x 8) x 4
= 40 x 4
= 160

$7 \times 2 \times 5$

a)

The estimated product
is ....
because: ....
.... x ....

The actual result:
....

$9 \times 5 \times 4$

b)

The estimated product
is ....
because: ....
.... x ....

The actual result:
....

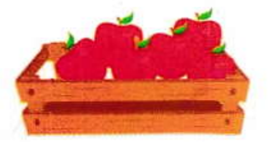
Parents' Tips:
- Let your child practice estimating the product of 3 numbers.

Estimate the product, then find the actual result:

Example

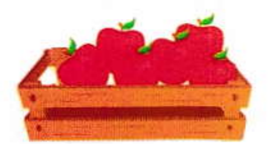
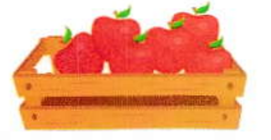
- **Rasha had 4 baskets. Each basket contains 6 apples. How many apples did Rasha have in all?**

The estimated product of 4 x 6 will be more than 20 apples because 4 x 5 = 20



The actual product:

4 x 6 = 24 apples

There are seven birds. Each bird has two wings.
How many wings are there?

The estimated product

The actual product

I learned

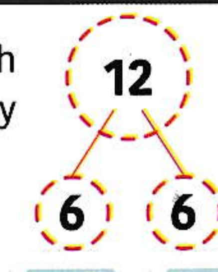
- Applying strategies to estimate products.
- Explaining problem-solving strategies.

The relationship between multiplication and division

How can we show the relation between multiplication and division?

Sara went to a fish store. She bought 12 tropical fish for her friends. She needs to distribute them equally between 2 bowls.

How many fish does she need to put in each bowl?



Number of fish in each bowl = 12 ÷ 2 = 6

Because 2 x 6 = 6 x 2 = 12

Using multiplication equation can help us to find the quotient of a division problem because multiplication and division are related.

Remember

- The result of a division problem is called the **quotient**.

Connect:

- Revise with your child how to read the time to the hour and to the minute.

Read, then solve:

a) Farida divided 21 sugar cubes among 7 cups of tea.
How many sugar cubes did she put in each cup of tea?

– ....

– ....

– Each cup will take .... sugar cubes.

b) Dalida's mother baked 36 cakes for a party. She wanted to distribute them equally among 6 tables. How many cakes will she put on each table?

– ....

– ....

– Each table will have .... cakes.

Parents' Tips:

- Encourage your child to use the relation between multiplication and division and help him/her to solve the above problems.

Activity 2

Use multiplication and division equations to represent the following relations:

a) 10 ÷ 2 = ... "because" 2 x .... = 10

b) 3 x .... = 12 "because" 12 ÷ .... = 3

c) 80 ÷ 10 = ... "because" 10 x .... = 80

d) .... ÷ 4 = 6 "because" 6 x 4 = ...

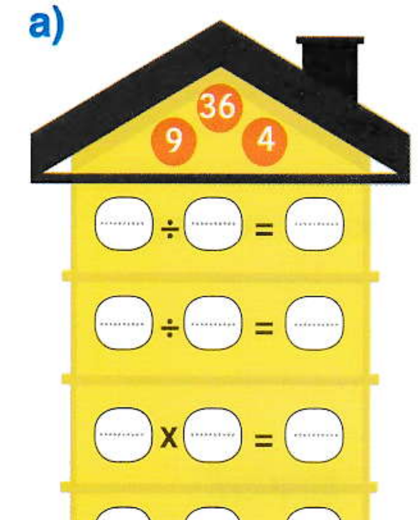
e) 9 x .... = 36 "because" 36 ÷ .... = 9

f) .... ÷ 7 = 2 "because" 7 x 2 = ...

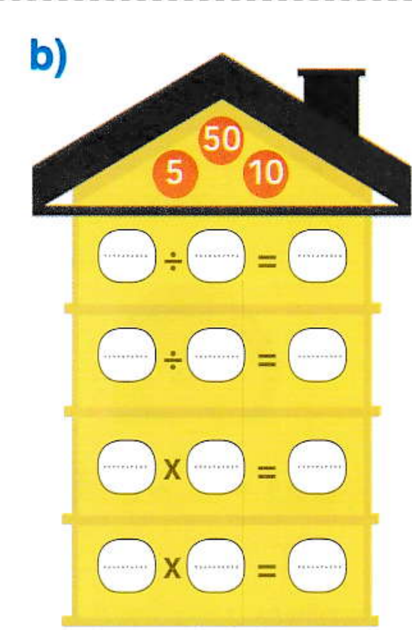
Activity 3

Complete the fact family:

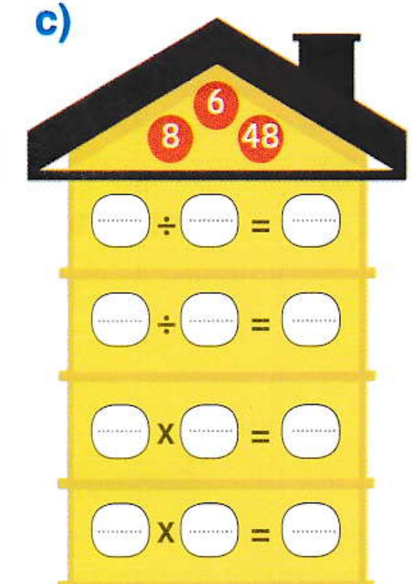
a)



b)



c)



Parents' Tips:

- Let your child practice the two operations (multiplication and division) by finding the missing numbers.

Activity 4

Solve each problem using different strategies, then name the used strategy:

Example $9 \times \ldots\ldots = 36$

First strategy	Second strategy	Third strategy	Fourth strategy
0 , 9 , 18 , 27 , 36	9 + 9 + 9 + 9 = 36	36 ÷ 9 = 4	36 → 9, 9, 9, 9
So, 9 x 4 = 36	So, 9 x 4 = 36	So, 9 x 4 = 36	So, 9 x 4 = 36
Strategy is	**Strategy is**	**Strategy is**	**Strategy is**
Skip-counting by 9	Repeated addition	Inverse operation	Part of a whole model

a)

9 x .... = 81

First strategy	Second strategy
....	....
....	....
....	....
Strategy:	**Strategy:**
....	....

b)

42 ÷ .... = 6

First strategy	Second strategy
....	....
....	....
....	....
Strategy:	**Strategy:**
....	....

Parents' Tips:
- Encourage your child to solve the problems using the favorite strategy for him/her.

Activity 5

Tick the strategy/strategies that can be used to solve each problem:

a) $4 \times \dots\dots = 40$

- [ ] Use 120 chart.
- [ ] Make a bar model.
- [ ] Inverse operation ($40 \div 4$).

b) $5 \times 3 \times 2 = \dots\dots$

- [ ] Use a multiplicative property.
- [ ] Draw an array.
- [ ] Use 120 chart.

c) $12 \div \dots\dots = 4$

- [ ] Make a bar model.
- [ ] Use a finger trick.
- [ ] Draw an array.

d) $72 \div 8 = \dots\dots$

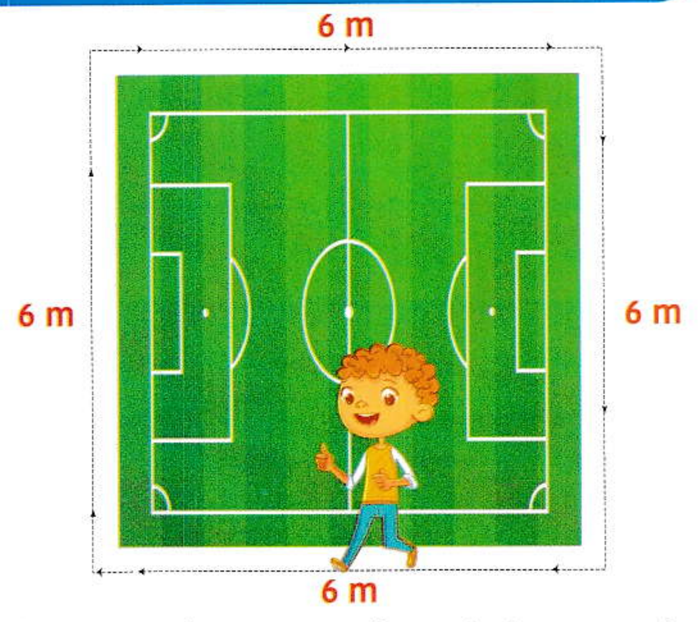
- [ ] Part of a whole model.
- [ ] Make a bar model.
- [ ] Use 120 chart.

I learned

- How to use the relation between multiplication and division to solve problems with an unknown number.
- Applying more than one strategy to solve multiplication and division problems with an unknown number.

(A) The perimeter of a square

• How can we measure the perimeter of a square?



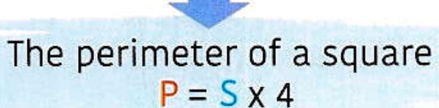
Amr was running around a square shaped playground.
How many meters will he run to finish running around the four sides?

• To find the total number of meters, you must calculate the perimeter (P):

$$P = 6 + 6 + 6 + 6 = 24 \text{ m}$$

Note

- Also you can find the perimeter of a square by multiplying 6 x 4 = 24 m.
  Because its side length (S) is repeated 4 times.



The perimeter of a square
$P = S \times 4$

Connect:

- Revise with your child the properties of some quadrilaterals (square - rectangle) that help us to determine the perimeter.

Activity 1 **Find the perimeter of each square:**

Example

3 cm

- P = 3 + 3 + 3 + 3 = 12 cm
- P = 3 x 4 = 12 cm

a)

4 cm

- P = ...
- P = ... x ...... = ... cm

b)

2 cm

- P = ...
- P = ... x ...... = ... cm

c)

5 cm

- P = ...
- P = ... x ...... = ... cm

Parents' Tips:

- Encourage your child to record the properties of a square that will help him/her to calculate the perimeter quickly.

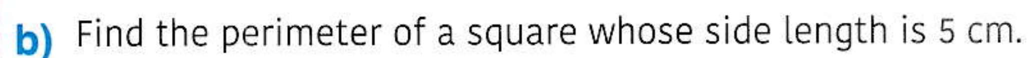
Activity 2 Read, then solve:

a) Ahmed wants to measure the perimeter of his square shaped bedroom, if the measure of one side is 4 m, what is the perimeter of Ahmed's room?

Side length = ...

Perimeter = side x 4

= .... x .... = ... m

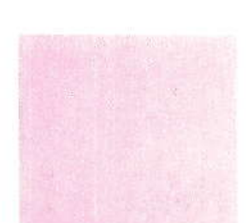


b) Find the perimeter of a square whose side length is 5 cm.

Side length = ...

Perimeter = ...

= .... cm



5 cm

c) Farida wants to plant a tulip flower in her school playground. The playground is a square shaped of side length 8 meters. What is the perimeter of the playground?

Side length = ...

Perimeter = ...

= .... m

Parents' Tips:

- Let your child read the story problems carefully and record the dimensions to calculate the perimeter.

How can we find the side length (S) of a square given its perimeter (P)?

If the perimeter of the square below is 32 cm, find its side length.

S

Perimeter = 32 cm

Perimeter = S x 4

S x 4 = 32

S = 32 ÷ 4

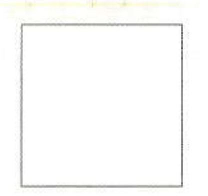
S = 8 cm

(Fact family relation:
8 x 4 = 32
32 ÷ 4 = 8)

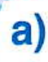
We get that: S = P ÷ 4

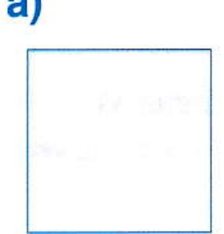
Activity 3 Find the side length of each square:

Example

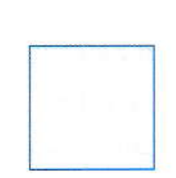


Perimeter = 16 cm
S = P ÷ 4
= 16 ÷ 4 = 4 cm





a)
P = 20 cm
S = ...



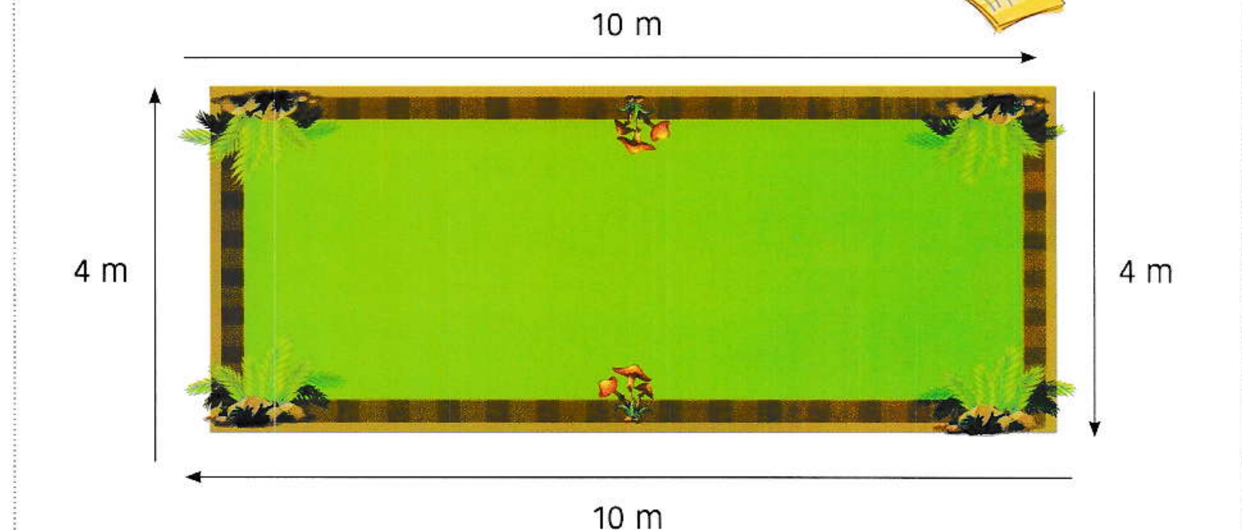
b)
P = 12 cm
S = ...

c)
P = 28 cm
S = ...

Parents' Tips:
- Make sure that your child understands how to find a missing side length, when the perimeter is known and let him/her write the rule several times to memorize it.

(B) The perimeter of a rectangle

How can we measure the perimeter of a rectangle?



Laila wants to build a fence around her rectangular garden. If the length of the garden is 10 m and its width is 4 m, find the total number of meters she needs to build the fence.

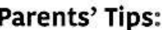
The perimeter = (10 + 4) + (10 + 4) = 28 m. (To build the fence she needs to calculate the perimeter.)

Note

- We can calculate the perimeter as (10 + 4) x 2 Because (10 m (its length) + 4 m (its width)) are repeated 2 times.

The perimeter of a rectangle

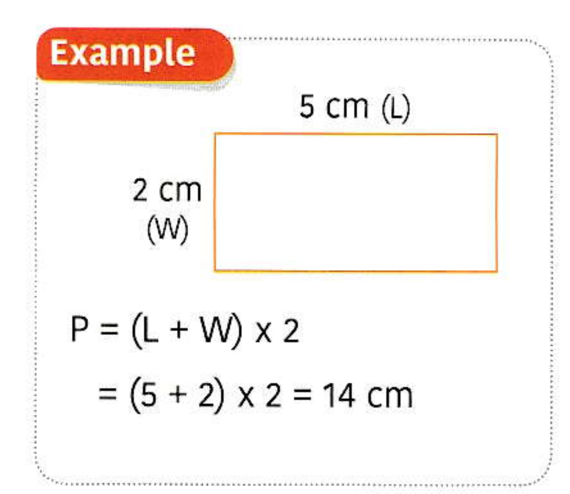
P = (L + W) x 2



Parents' Tips:

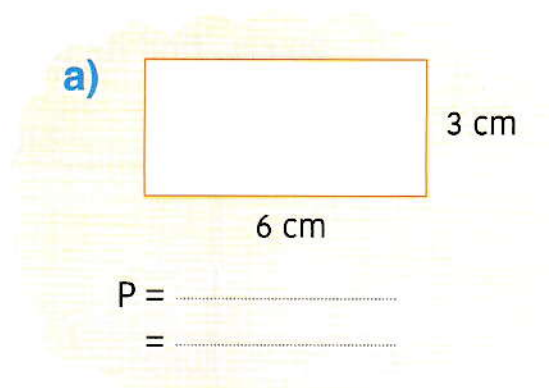
- Encourage your child to record the properties of the rectangle that will help him/her to calculate the perimeter quickly.

Find the perimeter of each rectangle:



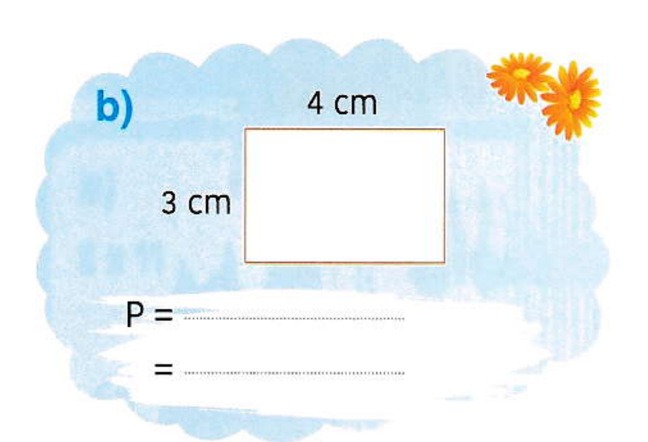
$P = (L + W) \times 2$

$= (5 + 2) \times 2 = 14$ cm



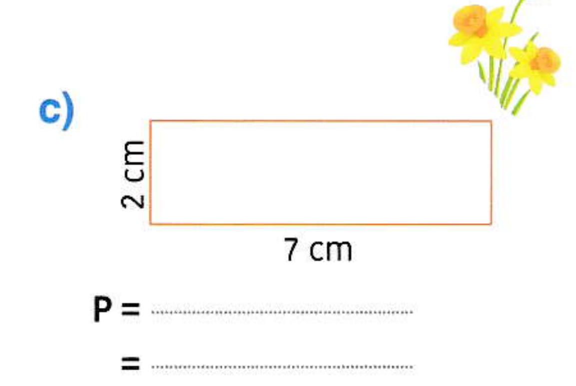
P = ...

= ....



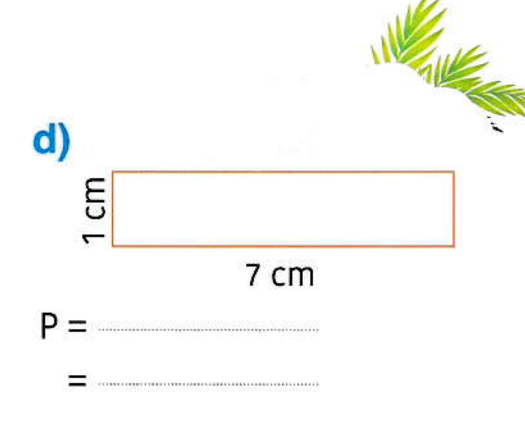
P = ...

= ....



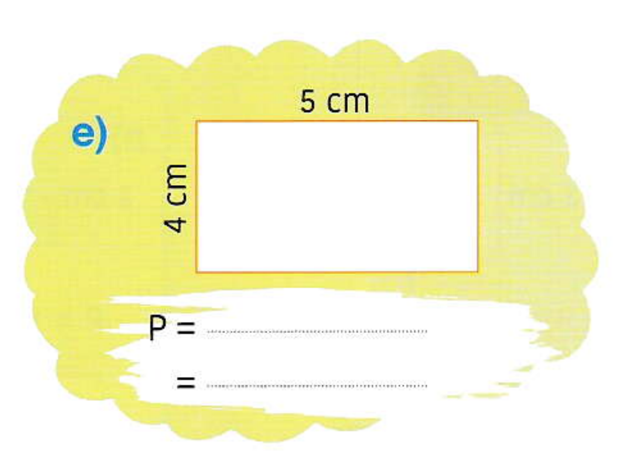
P = ...

= ....



P = ...

= ....



P = ...

= ....

Parents' Tips:

- Let your child write down the rule of calculating the perimeter of a rectangle several times to memorize it.

How can we find the missing length of a rectangle given its perimeter?

If the perimeter of the rectangle below is 20 cm, find its length.

? (L)

4 cm (W)

We know that: Perimeter = (L + W) x 2

P = 20 cm , W = 4 cm , L = ...?.... cm

(....L.... + W) x 2 = 20

(....L.... + W) = 20 ÷ 2

(....L.... + 4) = 10

L = 10 − 4

L = 6 cm

Fact family relation:
..10.. x 2 = 20
20 ÷ 2 = ..10..

Fact family relation:
..6.. + 4 = 10
10 − 4 = ..6..

We get that: L = (P ÷ 2) − W

Activity 5 Find the missing length of each rectangle:

Example

3 cm

?

P = 14 cm

L + W = 14 ÷ 2 = 7 cm

L = 7 − 3 = 4 cm

a)

2 cm

?

P = 10 cm

....

....

b)

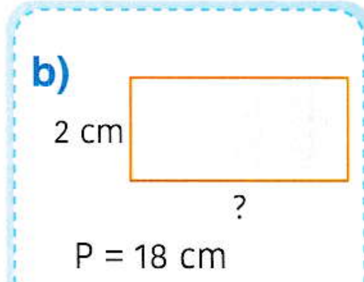
2 cm

?

P = 18 cm

....

....

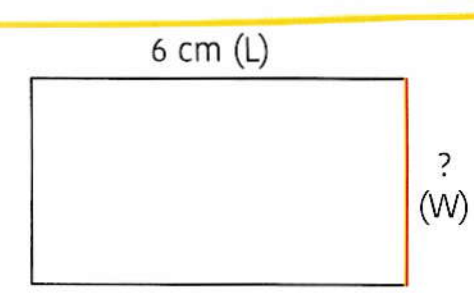


Parents' Tips:

- Make sure that your child understands how to find the missing length of a rectangle given its perimeter.

• How can we find the missing width of a rectangle given its perimeter?

If the perimeter of the rectangle below is 20 cm, find its width.



We know that: Perimeter = (L + W) x 2

P = 20 cm , L = 6 cm , W = ...?... cm

(6 + ...W...) x 2 = 20

(6 + ...W...) = 20 ÷ 2

(6 + ...W...) = 10

W = 10 − 6

W = 4 cm

Fact family relation:
...10... x 2 = 20
20 ÷ 2 = ...10...

Fact family relation:
...6... + 4 = 10
10 − 6 = ...4...

We get that: W = (P ÷ 2) − L

Activity 6 Find the missing width of each rectangle:

Example

5 cm (L)

? (W)

P = 14 cm

L + W = 14 ÷ 2 = 7 cm

W = 7 − 5 = 2 cm

W = 2 cm

a) 8 cm

?

P = 20 cm

....

....

....

b) 7 cm

?

P = 18 cm

....

....

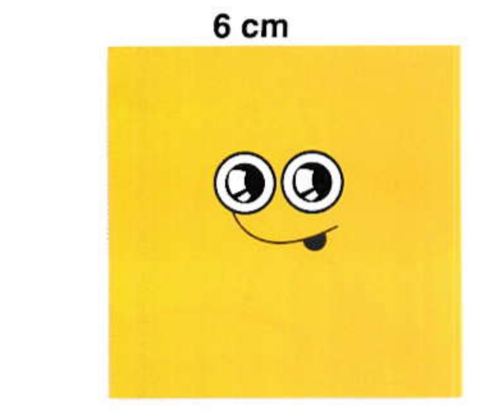
....

Parents' Tips:

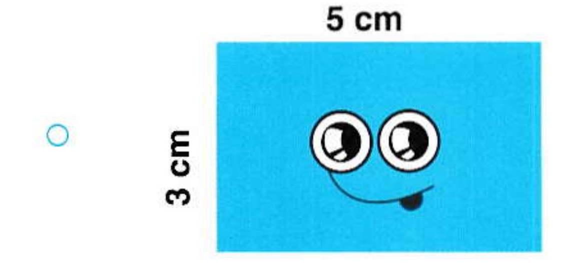
• Make sure that your child understands how to find the missing width of a rectangle given its perimeter.

Solve and match:

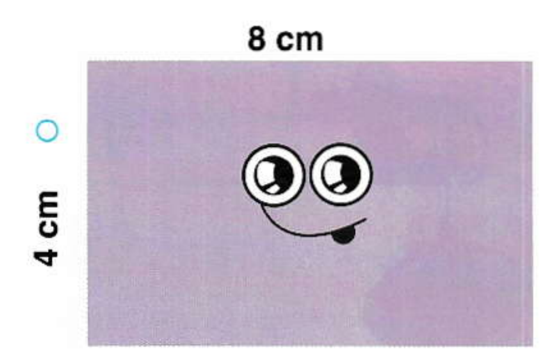
a) I'm a rectangle.
I have a length of 8 cm
and width of 4 cm.
So, my perimeter
is .... cm.



b) I'm a square.
I have a length of 6 cm.
So, my perimeter
is .... cm.



c) I'm a rectangle.
I have a length of 5 cm
and width of 3 cm.
So, my perimeter
is .... cm.

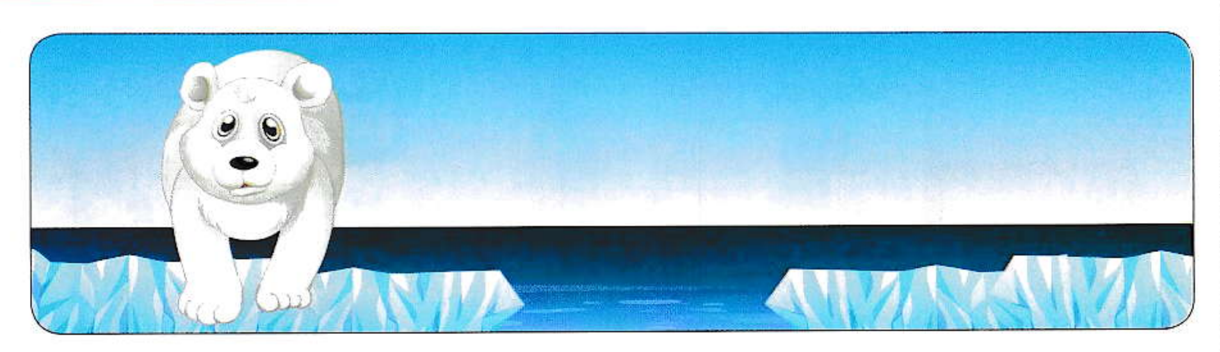


I learned

- Finding a missing side in a shape (square and rectangle) with knowing its perimeter.

Lesson 67 Applying multiple strategies to solve two-step story problems

How can we use more than one operation to solve a story problem?



There were 3 families of polar bears that lived on the glacier. Each family had 4 bears. If 8 bears went out to hunt for food, how many bears didn't go out for hunting?

We can solve the problem using 2 steps:

Step (1) **We multiply:**

The total number of bears = 3 x 4 = 12 bears

Step (2) **We subtract:**

The number of left bears = 12 – 8 = 4 bears

We can represent the answer as one equation:

the number of left bears = (3 x 4) - 8

12 - 8 = 4 bears

Connect:

- Revise with your child and practice on multiplication by playing (Roll and Draw) game. Let him/ her roll one die twice, then draw an array to match the fact, solve the problem and record the product.

Activity 1 Read, then solve:

a) Samy earns L.E. 10 daily as a gardener, last Friday he got sick and he didn't work. Find the total amount of money that he earned this week.

Step (1) ....

....

Step (2) ....

....

- Equation is: ....
- The total amount of money he earned = L.E. ....

b) Mrs. Basma bought 3 boxes of chocolate. Each box contains 6 pieces. After sharing the chocolate equally among the children, she has 2 pieces of chocolate left. How many children are there in Mrs. Basma's class?

Step (1) ....

....

Step (2) ....

....

- Equation is : ....
- There are .... children in Mrs. Basma's class.

Parents' Tips:

- Help your child to read carefully the problems which contain more than one operation and be able to solve it.

Activity 2 Find the result of the following:

Example

Hoda had 24 marbles and 6 jars. She wanted to put 3 marbles inside each jar. How many more jars did she need to share the marbles equally?

Step (1) **We divide:**

The number of jars = $24 \div 3 = 8$ jars

Step (2) **We subtract:**

The number of needed jars = $8 - 6 = 2$ jars

- The equation is: $(24 \div 3) - 6$

$8 - 6 = 2$ jars

Sara bought a bunch of 18 flowers. The bunch includes an equal number of red flowers, blue flowers and white flowers. She takes away the whole blue flowers. How many flowers are left?

Step (1) ....

....

Step (2) ....

....

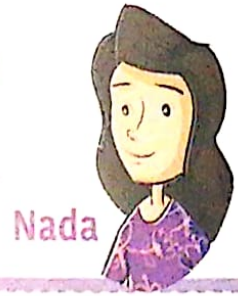
- The equation is: ....

I learned

- Solving two-step story problems involving addition, subtraction, multiplication or division.

Checking the error in two-step story problems

Mother distributed 30 pounds equally among her three children: Sara, Sherif and Nada, then their father came and gave each one of them 5 pounds more. How much money will each child have?



Because:

First, you divide $30 \div 3 = 10$ pounds

then add 5 pounds

$10 + 5 = 15$ pounds

then each one will have 15 pounds.

- The equation is $(30 \div 3) + 5 = 15$

Read and check the answer, then solve the problem if it is incorrect:

a) Farah bought 12 pieces of gum. Her friend gave her 9 more, she ate 6 of them. How many pieces of gum left with her?

Karim's answer

The number of gum pieces left with her is 15 pieces.

Because 12 + 9 = 21, then 21 - 6 = 15 gum pieces

Correct (   ) , Incorrect (   )

....

....

....

b) Omar had 3 bags of banana. Each bag contained 4 bananas; he had also 8 bananas that were not in the bag. How many bananas did Omar have in all?

Mona's answer

The number of bananas is 64 bananas.

Because 3 + 4 = 8,

then 8 x 8 = 64

Correct (   ) , Incorrect (   )

....

....

....

Try to solve the problems with your friend, then check the answers:

Amar had to sell 500 cups of lemonade in 3 days. On the first day he sold 58 cups, on the second day he sold 105 cups and on the third day he sold 190 cups. How many more cups does he need to sell?

Your friend's answer

Number of sold cups = 58 + 105 + 190 = 353 cups

What he needs to sell = 500 + 353 = 853 cups

Correct (   ) , Incorrect (   )

....

....

....

I learned

- Analyzing the errors made by others, and finding the correct answers.

More applications on solving two-step story problems

- **How can we solve a two-step story problem using different strategies?**

During a basketball match between Egypt and Cameron, both teams scored 152 points. If Egypt scored 115 points during this match, how many more points did Egypt score than Cameron?

We can use more than one strategy to solve two-step story problems.

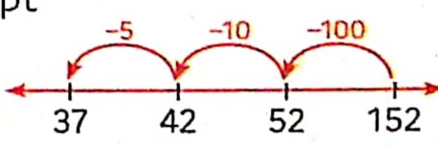
First strategy: Number line

Step (1): Subtract

Points of Cameron = total points – points of Egypt

= 152 – 115 = 37 points

100 10 5



Step (2): The difference = points of Egypt – points of Cameron

= 115 – 37 = 78 points

Second strategy: Standard model

Step (1): Subtract

```
  152  ⟶ total points
– 115  ⟶ points of Egypt
  ---
  037 points ⟶ points of Cameron
```

Step (2): Subtract

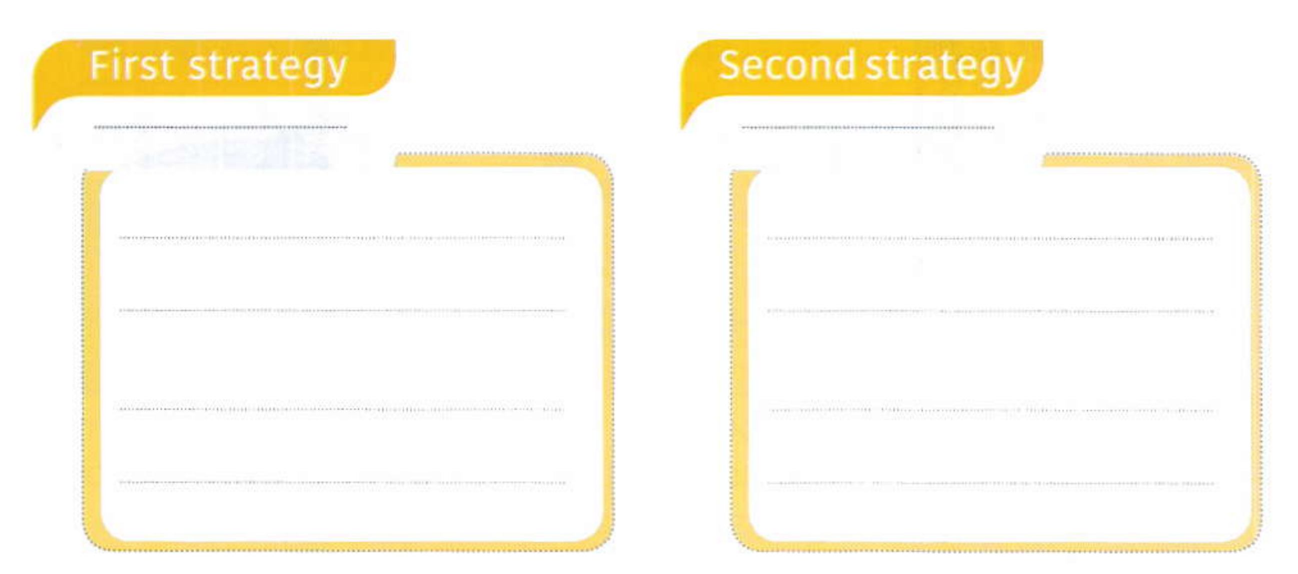
```
  115  ⟶ points of Egypt
– 037  ⟶ points of Cameron
  ---
  078 points ⟶ the difference
```

Connect:

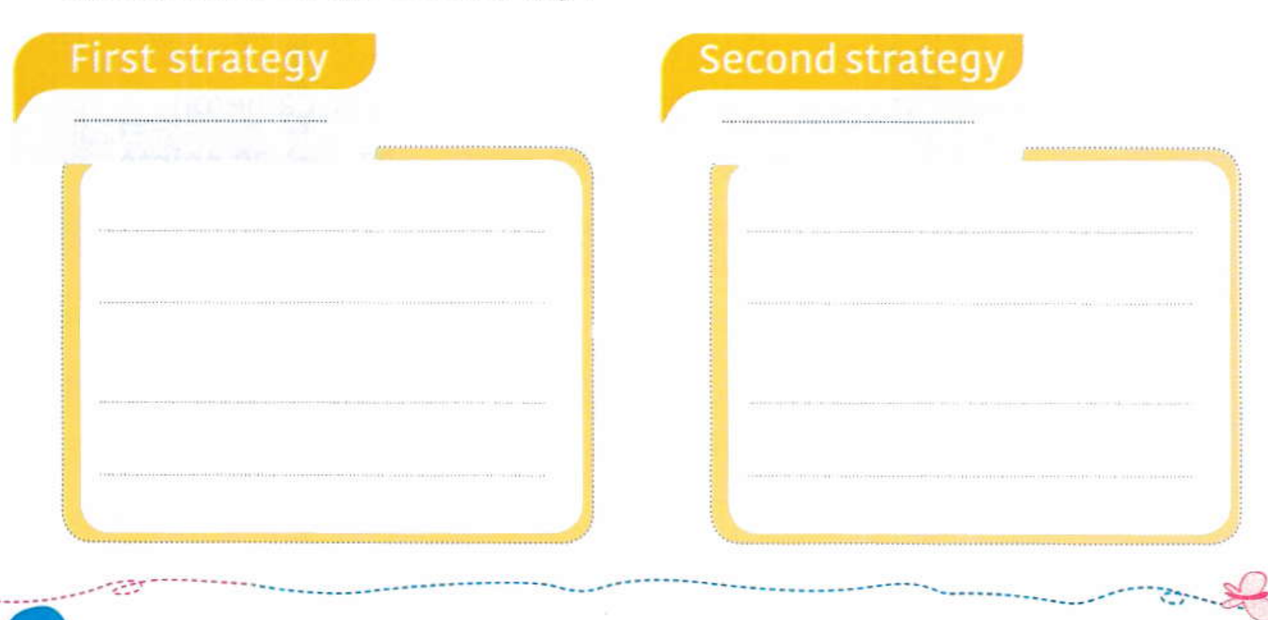
Revise with your child how to read digital clock, and represent the time on the analog clock by drawing the two hands of the clock.

Solve the following problems using 2 different strategies:

a) There were 4 seals swimming in the water. Each seal caught 6 fish. 3 of them got a way. How many fish did the seals eat?



b) Our school library started the day with 284 books. On the second day 28 books were returned back and some others were checked out. At the third day the school library had 293 books only. How many books were checked out on the second day?

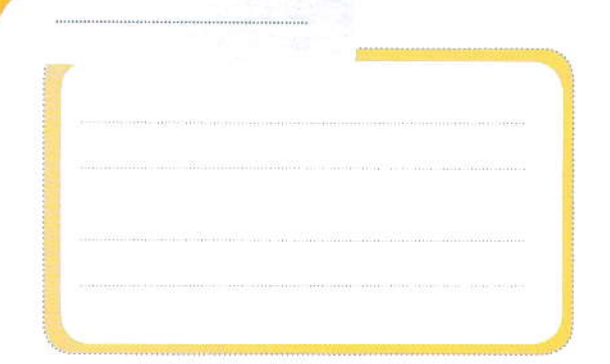


Parents' Tips:

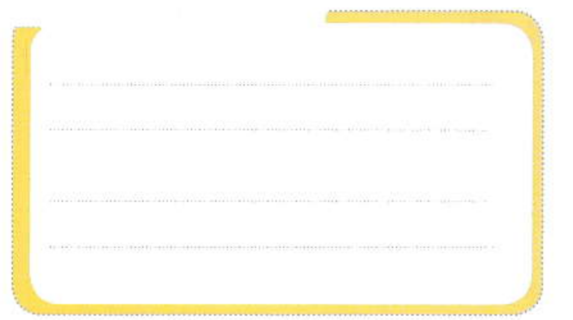
- Make sure that your child understands each story problem and let him/her work independently to solve the above problems.

c) Emad earned L.E. 568 in a week, during the second week he earned L.E. 134. At the end of the third week the amount became L.E. 739, find the amount of money he earned at the third week.

First strategy



Second strategy



Activity 2 **Complete to write a two-step story problem using the given equations as an example:**

Example *Equation is $(10 \times 3) - 9 = 21$ fish*

A fisherman had 3 containers of fish. If each container holds 10 fish, he found 9 small fish. So, he threw them away. How many fish were left with him?

Equation is $(18 \div 2) + 5 = 14$ pieces

.... bought small boxes containing .... bars of chocolate. Then he distributed them equally among his .... daughters. If each daughter already has .... bars of chocolate of her own. Find the number of bars of chocolate that each daughter has in all.

Connect:

• Help your child to imagine a story problem that represents the given equations.

Activity 3 Form a two-step story problem using the given equations:

Equation is $(3 \times 6) - 2 = 16$

a)

Equation is $(25 \div 5) + 20 = 25$

b)

I learned

- Applying multiple strategies to solve two-step story problems.
- Writing two-step story problems.

General Activities on Chapter 1

1 Underline the correct answer:

a) (5 x 6) x 8 = ...

1) 5 x (6 + 8)
2) 240
3) 5 x 40

b) 5 x (3 + 7) = ...

1) 5 + (3 x 7)
2) (5 x 3) + (5 x 7)
3) 5 x 3 x 7

c) 10 x 9 = ...

1) (10 x 3) + (10 x 3)
2) (10 x 3) + (10 x 6)
3) (10 + 3) x (10 + 6)

d) 2 x (12 + 6) = ...

1) (2 x 12) + 6
2) (2 x 6) + (2 x 12)
3) 2 x 6 x 12

2 Find the product, then write the property used:

a) 8 x 7

....

....

.... property

b) 3 x 9 x 2

....

....

.... property

c) 8 x 5 x 10

....

....

.... property

d) 9 x 6

....

....

.... property

3 **Circle the equations which have the estimated result less than 40:**

a) $2 \times 7 \times 3$ b) $4 \times 9 \times 2$ c) $6 \times 2 \times 3$

d) $8 \times 1 \times 4$ e) $6 \times 3 \times 7$ f) $5 \times 3 \times 9$

4 **Write the unknown factor for each pair, then write the strategy you have used:**

a) 54 ÷ .... = 9 Because 9 x .... = 54

The strategy used ....

b) 63 ÷ .... = 7 Because 7 x .... = 63

The strategy used ....

c) 6 x .... = 24 Because 24 ÷ 6 = ...

The strategy used ....

d) 4 x .... = 36 Because 36 ÷ 4 = ...

The strategy used ....

5 **Find:**

a) 6 cm

Perimeter = ... cm

b) 8 cm

Perimeter = 22 cm

Width = ... cm

6 **Read and solve:**

a) A rectangular swimming pool of 9 meters width with a perimeter of 40 meters. What is the length of the pool?

- ....
- ....
- ....

b) Dalia went to the cinema to watch a movie with her friends. The cinema consists of 3 sections, each section has 4 rows and each row has 7 seats. Find the total number of seats.

- ....
- ....
- The total number of seats = ... seats

c) A shopkeeper bought 8 boxes of pineapples, each box contains 6 pineapples. He wants to distribute them equally on 4 shelves. How many pineapples will be on each shelf?

- ....
- ....
- Each shelf will have .... pineapples.

d) Sara had 36 cookies, she divided them equally among 4 bags. How many cookies did she place in each bag?

- ....
- ....
- Each bag will have .... cookies.

Connect on Chapter 1

1 Complete:

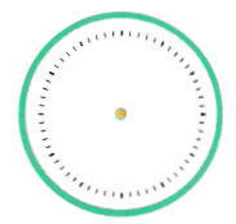
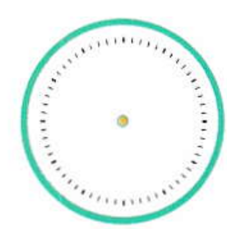
a) The square has .... equal sides and each 2 opposite sides are ....

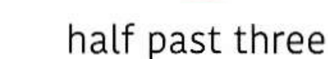
b) (4 x 2) x .... = 88

c) In the rectangle each 2 opposite sides are .... and ....

d) The perimeter is the .... of all sides length.

2 Draw the 2 hands of each clock to represent the given time:



8 : 15   half past three   6 : 45   3 : 20

3 Read, then solve:

Noura had a bag of marbles and gumballs of mass 100 grams. If there are 8 gumballs; each of mass 5 grams and some marbles; each of mass 10 grams, find how many marbles are in her bag.

1 Underline the correct answer:

a) $5 \times (6 \times 7) =$ ....

[$5 \times (6 + 7)$, $(5 \times 6) \times 7$, $(5 + 6 + 7)$]

b) $36 \div$ .... $= 9$

(6 , 4 , 9)

c) The width of the rectangle [6 cm] whose perimeter is 18 cm = ...

(5 cm , 3 cm , 6 cm)

2 Find the product in each of the following using the distributive property:

a) 7×8

b) 3×6

3 On a Friday evening, a pizza shop had orders for 13 vegetable pizzas and 27 chicken pizzas. If the shop had only 4 chefs and each one made an equal number of pizzas, how many pizzas each chef made?

- ....
- Each chef made .... pizzas.

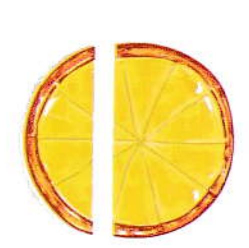
Chapter 2

Pacing Guide

Lesson	Instructional Focus	Key vocabulary
Lesson 71	**Fractions** • Investigate the relationship between parts and wholes in fractions. • Define the word "fraction" in relation to parts and wholes.	• Eighths • Equal parts • Fair shares • Fourths • Fraction • Halves • Thirds • Whole
Lessons 72&73	**The fraction as a part of a whole** • Create models to represent fractions. • Describe one part of a whole using fraction vocabulary. • Define unit fraction. • Discuss fractions terms: numerator, denominator and unit fraction. • Reason with fractions in real-life applications using models. • Write a fraction story problem using models.	• Denominator • Numerator • Unit
Lesson 74	**Comparing unit fractions** • Compare different unit fractional parts of the same whole using models. • Explain the relationship between the size of the denominator and the size of the fraction as it relates to the whole.	• Greater than • Less than • Unit fractions
Lesson 75	**Unit fraction as a set of a whole** • Identify unit fractions of a set. • Expand originals definition of fraction.	• Gram • Kilogram • Mass • Set • Whole
Lesson 76	**Comparing the same fractions of different wholes** • Explain why the size of the whole matters when comparing two unit fractions.	• Sets • Wholes
Lesson 77	**Equal parts of one whole** • Explain why the size of the whole matters when comparing two unit fractions.	• Sets • Wholes
Lessons 78,79 & 80	**The relation between fraction and division** • Investigate the relationship between fractions and division using models. • Divide a set into equal parts. • Determine the quantity in each fractional part of a set. • Explain the relationship between fractions and division. • Reason with fractions in real-life applications.	• Divide • Division

Fractions

How could I cut the apple pie to give each of my 2 friends an equal part?



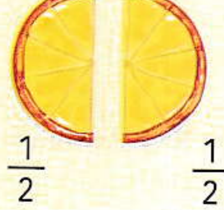
The 2 parts are not equal.

The 2 parts are not equal.

You should cut the apple pie into halves to give each of your friends an equal part.

1 whole

into halves



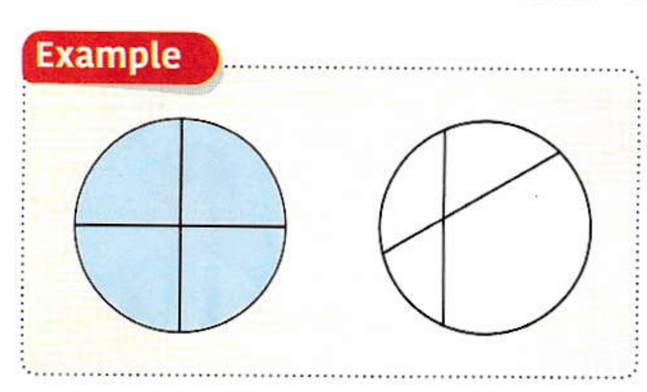
$\frac{1}{2}$ $\frac{1}{2}$

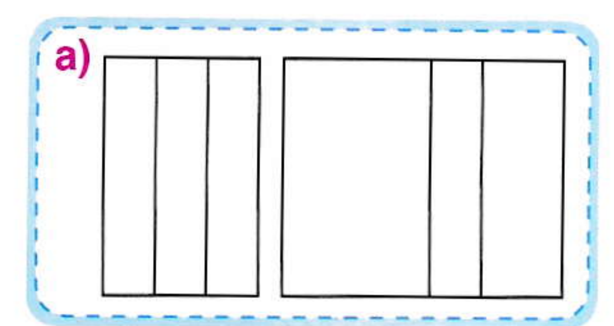
Fraction: It is a number that expresses (shows) equal parts of a whole object.
(One whole can be divided equally into 2 halves.)

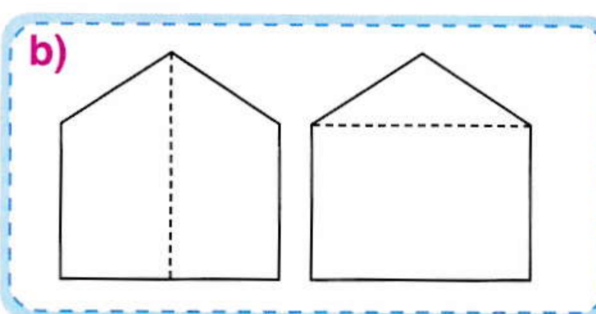
Connect:

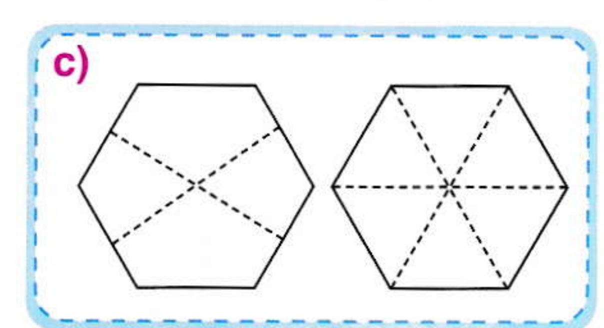
- Make sure that your child knows how to divide an apple pie into 2 equal parts.

Color the shape that is divided into equal parts:

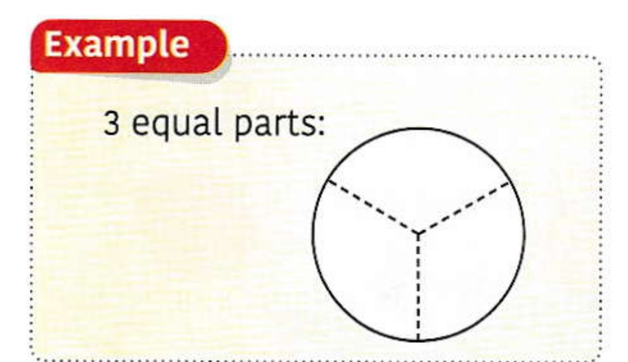


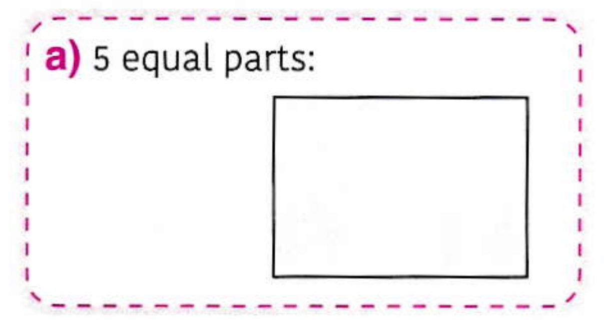


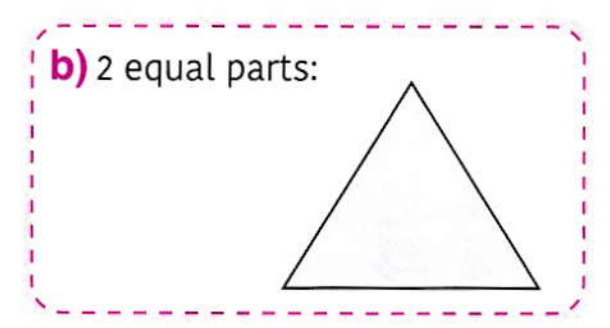


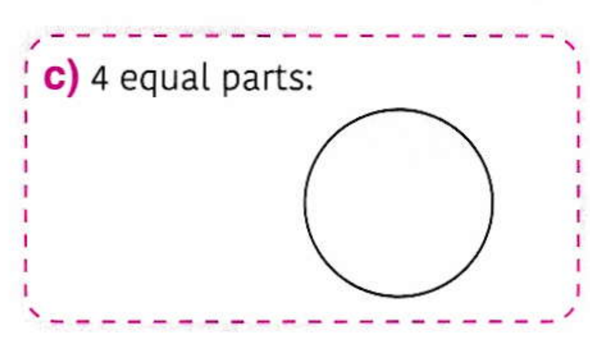


Draw to divide each shape as required:









Parents' Tips:
- Help your child to observe equal parts.

How can we read fractions?

1 whole

Halves

Thirds

Fourths

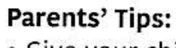
Fifths

Sixths

When we read fractions, we add (ths)
Except: (Halves and Thirds).

Sevenths

Eighths



Parents' Tips:

- Give your child some figures divided into different equal parts and ask him/her to write their fractions.

Activity 3 Match:

a) ◌ — Thirds

b) ◌ — Halves

c) ◌ — Fourths

d) ◌ — Eighths

Activity 4 Choose the name that represents each fraction:

Example

✓ Thirds ○ Fourths

a) ○ Fifths ○ Sixths

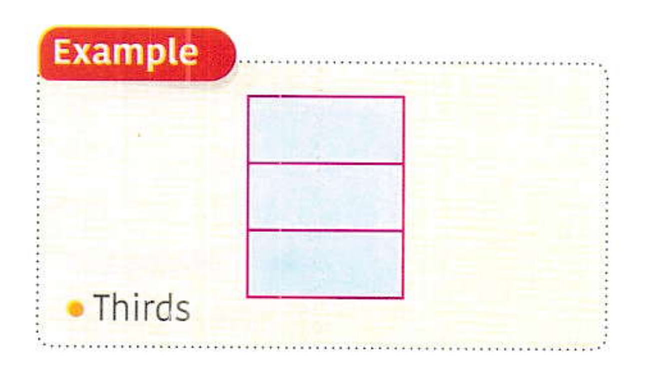
b) ○ Sixths ○ Eighths

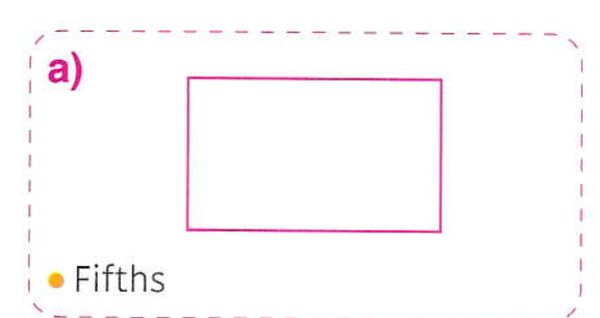
c) ○ Fourths ○ Thirds

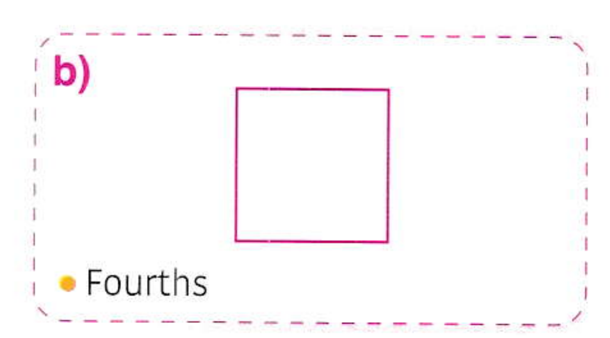
Parents' Tips:

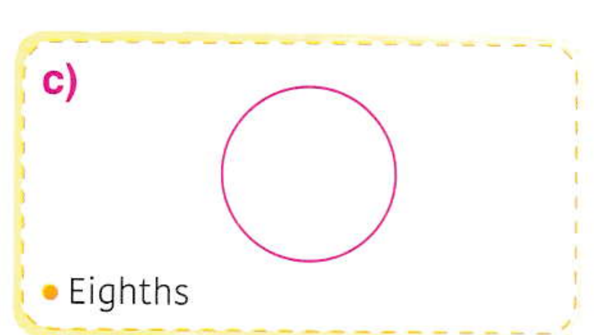
- Encourage your child to divide the empty shapes (equally), then read the fraction.

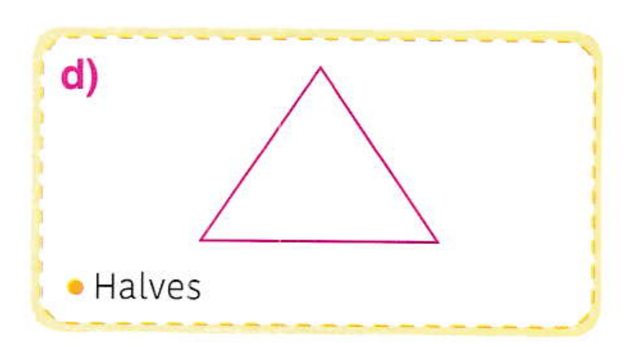
Divide the following shapes to represent the required fractions:

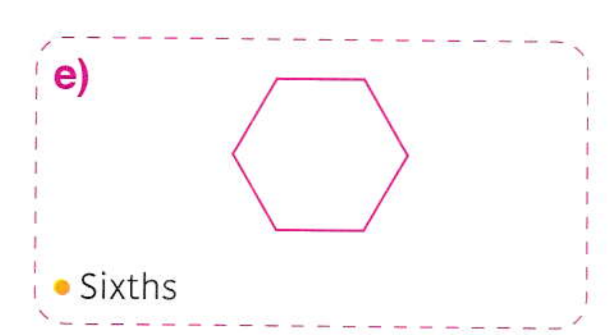












I learned

- The definition of a fraction.
- Reading fractions.
- The relation between parts and one whole.

The fraction as a part of a whole

How can we divide one whole into equal parts using bar models?

Sara has a big chocolate bar. Ahmed and Mohamed asked her to divide it equally between them. How many parts will each one take?

She will divide 1 whole into 2 equal parts.
So, 1 whole = 2 halves.

1 whole	
$\frac{1}{2}$	$\frac{1}{2}$

Ahmed will get one half of the chocolate bar.

Mohamed will get one half of the chocolate bar.

If Laila came afterwards, then Sara needs to divide the chocolate bar equally among her three friends, how many parts will each one take?

She will divide 1 whole into 3 equal parts.
So, 1 whole = 3 thirds.

1 whole		
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

Ahmed will have $\frac{1}{3}$ of the bar.

Mohamed will have $\frac{1}{3}$ of the bar.

Laila will have $\frac{1}{3}$ of the bar.

WE NOTICE THAT:

One whole can be divided into:
2 halves, 3 thirds, 4 fourths,
5 fifths and so on.

Connect:

- Ensure that your child can give different visual representations of halves, thirds and fourths by trying to divide some clocks into fractional parts.

FRACTION MODEL

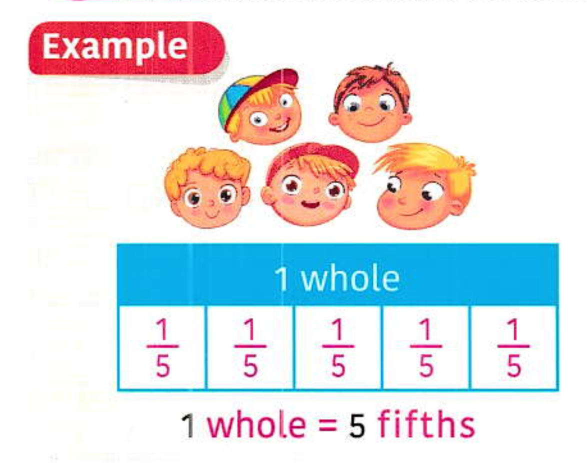
It is a bar used to represent fraction by drawing strips to show equal parts.

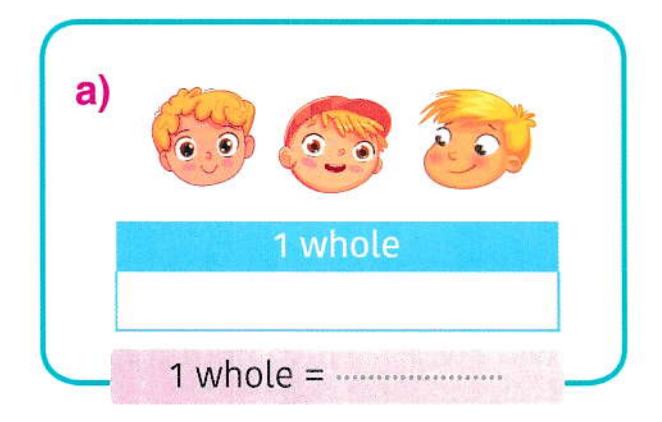
- 1 whole
- 2 equal parts to represent halves.
- 3 equal parts to represent thirds.
- 4 equal parts to represent fourths.
- 5 equal parts to represent fifths.
- 6 equal parts to represent sixths.
- 7 equal parts to represent sevenths.
- 8 equal parts to represent eighths.

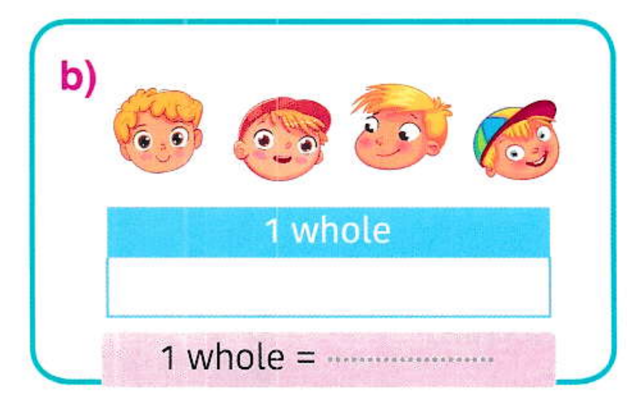
1							
$\frac{1}{2}$	$\frac{1}{2}$						
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$					
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$				
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$			
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$		
$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

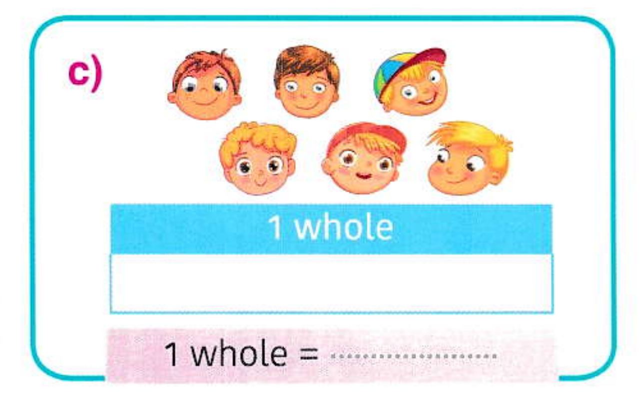
Draw fraction strips to make an equal sharing according to the number of children:

Example







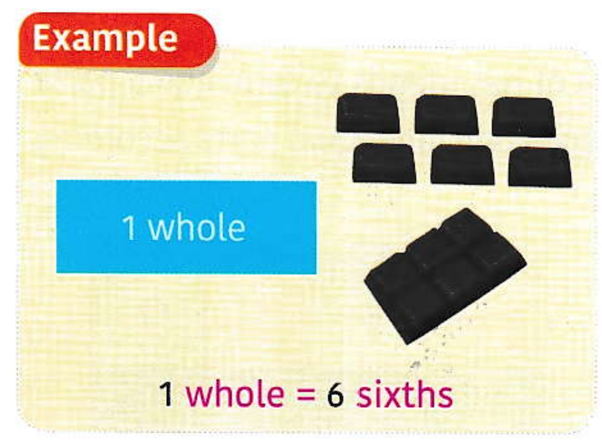


Parents' Tips:

- Help your child to form his/her own fraction strips using a foam sheet, scissors and a marker, let him/her cut the strips equally, then label each part.

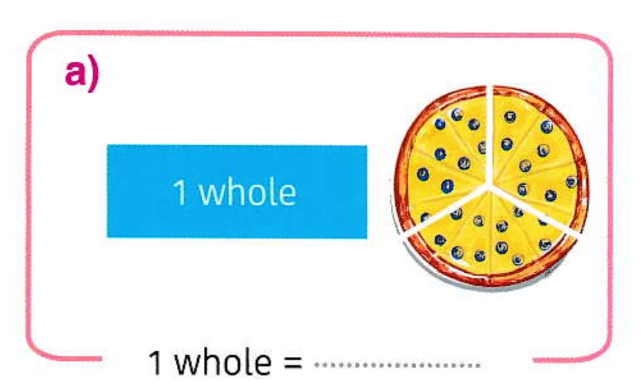
Activity 2 Complete the following:

Example



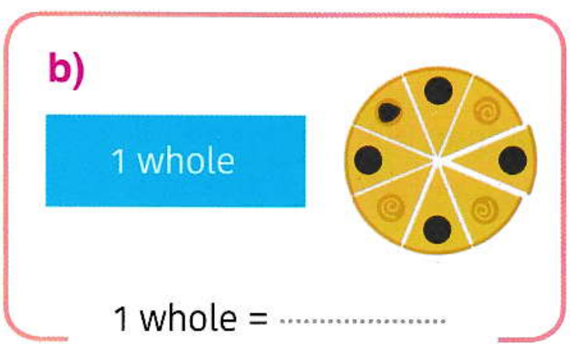
1 whole = 6 sixths

a)



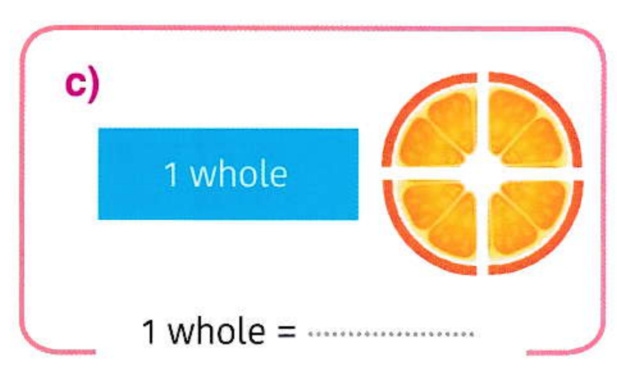
1 whole = ...

b)



1 whole = ...

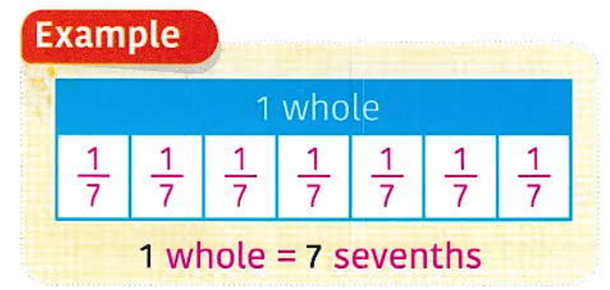
c)



1 whole = ...

Activity 3 Write the missing fractions:

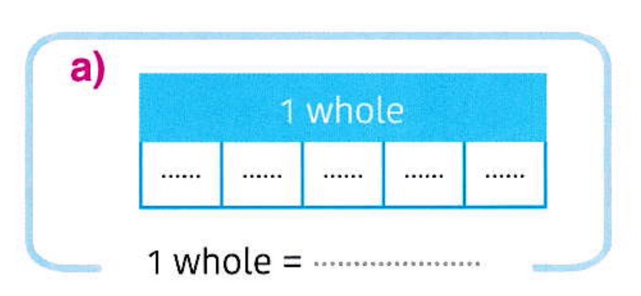
Example



1 whole						
$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$

1 whole = 7 sevenths

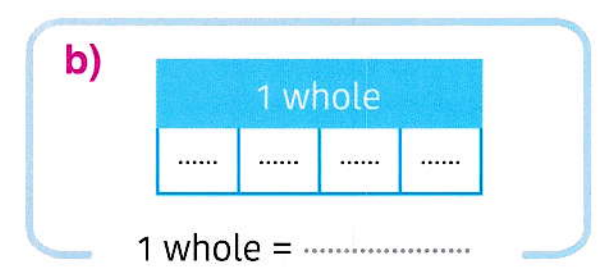
a)



1 whole				
......	......	......	......	......

1 whole = ...

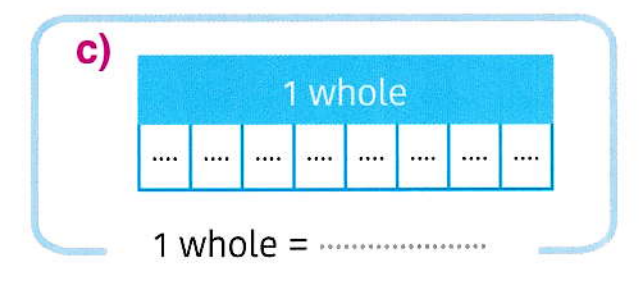
b)



1 whole			
......	......	......	......

1 whole = ...

c)



1 whole							
....	....	....	....	....	....	....	....

1 whole = ...

Parents' Tips:

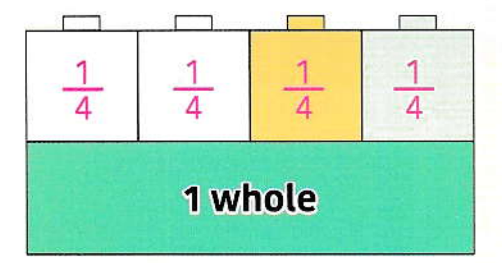
- Ensure that your child understands that when we divided the bar model into halves, the total length of the bar is equal to the whole bar.

Activity 4 Read, then solve:

Example

Malika has a long Lego cube, she asked 4 of her friends to form equal parts with her Lego cube. Draw to divide the Lego cube into equal parts according to the number of Malika's friends.

We will divide 1 whole into 4 equal parts.



1 whole = 4 fourths

a) Said is working as a carpenter. He has a long piece of wood. He needs to cut it into 8 equal pieces to help him to finish his work. Draw fraction strips that can help him.

We will divide 1 whole into .... equal parts.

1 whole = ...

1 whole

b) Rahma had a chocolate bar, she divided it into sixths. Draw fraction strips to show what she did.

She divided 1 whole into .... equal parts.

1 whole = ...

1 whole

Parents' Tips:
- Ensure that your child labels each fraction bar correctly when solving the above problems.

How can we divide fraction strips in two steps?

Dividing fractions strips in two steps:

Khaled has a piece of candy. If he cut it into thirds, then he cut each third into halves again, to share it equally among his friends, draw fraction strips to find the number of friends he shared the candies with.

Step (1):

We represent 1 whole as 3 thirds.

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$
$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	
1 whole					

Step (2):

We divide each third into 2 halves

(each third has 2 equal parts, then we had 6 equal parts).

So, 1 whole = 3 thirds = 6 sixths.

Activity 5 Read, then solve:

a) At Dina's birthday party, her mother baked a big chocolate cake. She cut it into 4 equal parts, then she cut each part into 2 halves again. Draw fraction strips to represent the cut pieces.

Step (1):

We represent 1 whole as ....

1 whole

Step (2):

We divide each .... into ....

1 whole = ... = ...

Parents' Tips:

- Ensure that your child reads the problem carefully to determine the two steps easily, then use his/her colored pens to help him/her in solving.

b) Laila bought a loaf of bread. She cut it into 2 halves, then she cut each half into 4 fourths. Draw fraction strips to represent the cut pieces.

Step (1):

We represent 1 whole as ....

1 whole

Step (2):

We divide each .... into ....

- 1 whole = ... = ...

c) Mahmoud divided an electric wire into 4 fourths, then he cut each fourth into 2 halves. Draw fraction strips to represent the cut pieces.

Step (1):

....

Step (2):

....

- 1 whole = ... = ...

d) Seif makes a garage for his toy truck. He bends a rectangular piece of cardboard into 2 halves, then he bends each half into 2 halves again. Draw fraction strips to represent the pieces.

Step (1):

....

Step (2):

....

- 1 whole = ... = ...

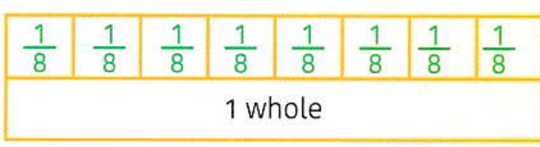
Activity 6 Read, then solve:

Example

Maha had a long foam sheet. She cut it into 8 equal parts, she gave 3 parts to her brother and 1 part to her sister. What is the fraction of the foam sheet that represents the part that is left with her?

Step (1):

We represent 1 whole as 8 eighths.

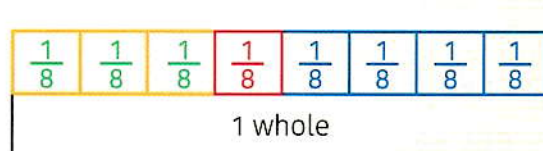


Step (2):

When we count the given parts:

- we have 3 eighths and 1 eighth.
- (3 + 1 = 4)

So, the given parts are 4 eighths.



Step (3):

- Take away 4 eighths out of 8 eighths.
- (8 − 4 = 4)

So, the left will be 4 eighths ($\frac{4}{8}$).

$\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$

1 whole

a) Ahmed had a long piece of wood. He cut it into 4 equal parts, he gave 1 part to Samy and another part to Farid. What is the fraction that represents the part of wood left with Ahmed?

Step (1):

We represent 1 whole as ....

Step (2):

So, the given parts are ....

1 whole

Step (3):

Take away .... from ....

- The left will be ....

Parents' Tips:

- Help your child to recognize how to divide fraction strips on three steps and encourage him/her to solve some activities.

b) Amir had a chocolate bar. He cut it into 5 equal parts. If he ate 3 parts, what is the fraction that represents the part of chocolate left with him?

Step (1):

We represent 1 whole as ……………………

Step (2):

So, the given parts are ……………………

Step (3):

- The left will be ……………………

c) Laila baked a chocolate cake. She divided it into 4 equal parts, then she cut each fourth into 2 halves. If Laila and her sister ate 4 parts, what is the fraction that represents the part of chocolate cake that is left?

Step (1):

……………………………………………………………………………………………

Step (2):

……………………………………………………………………………………………

Step (3):

……………………………………………………………………………………………

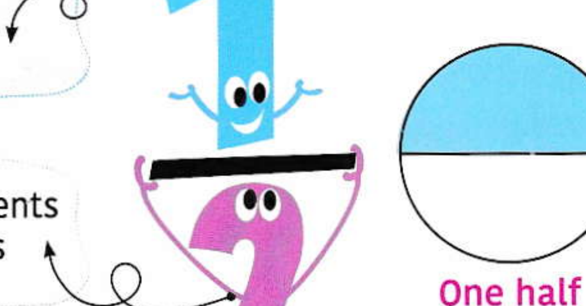
- Describing one part of a whole.
- Creating models to represent fractions.
- Solving fraction story problems using model strips.

Comparing unit fractions

How can we read unit fractions?

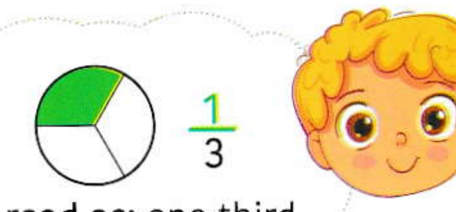
The number at the top represents the shaded part which is called **Numerator.**

The number at the bottom represents the total number of parts which is called **Denominator.**



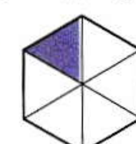
$\frac{1}{4}$

read as: one fourth



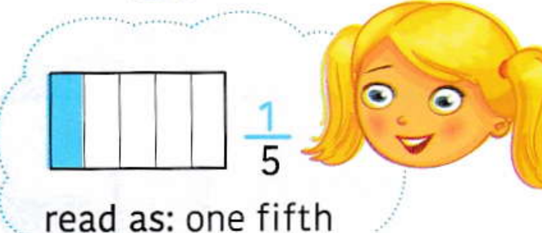
$\frac{1}{3}$

read as: one third



$\frac{1}{6}$

read as: one sixth



$\frac{1}{5}$

read as: one fifth

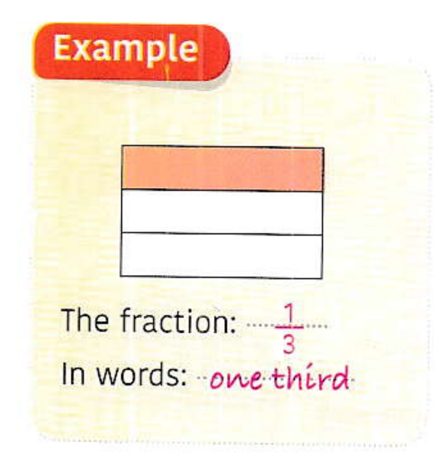
$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{7}, \frac{1}{8}$ and so on are called unit fractions because they have 1 as a numerator.

Connect:

- Ensure that your child realizes that in dividing a bar model into fourths, each part represents only one part out of four parts as a unit fraction $\frac{1}{4}$.

Write the fraction that represents the shaded part, then write it in words:

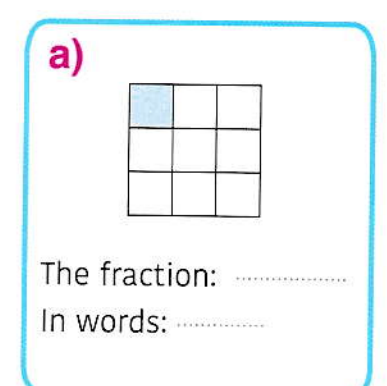
Example



The fraction: $\frac{1}{3}$

In words: one third

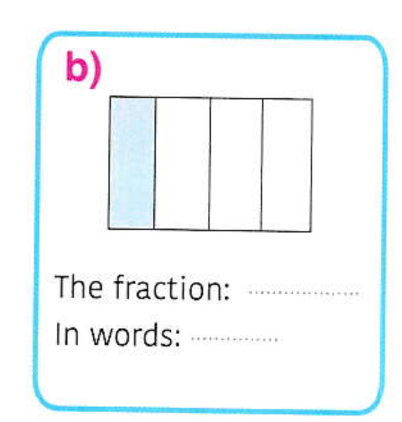
a)



The fraction: ....

In words: ....

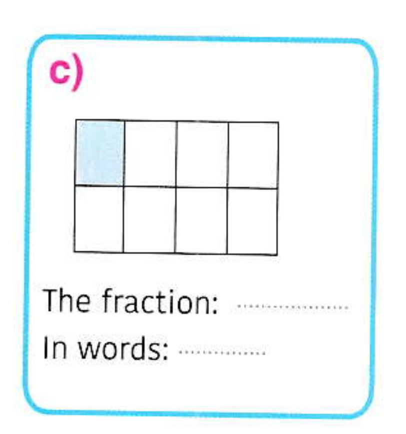
b)



The fraction: ....

In words: ....

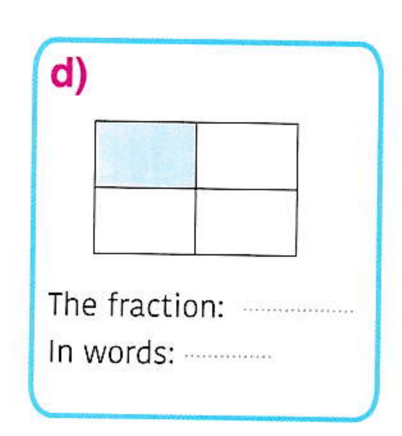
c)



The fraction: ....

In words: ....

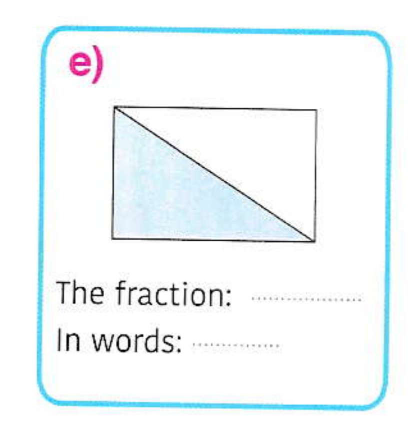
d)



The fraction: ....

In words: ....

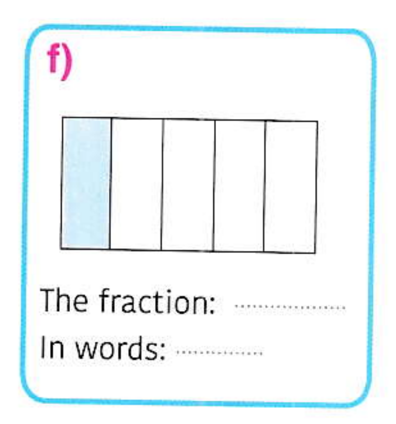
e)



The fraction: ....

In words: ....

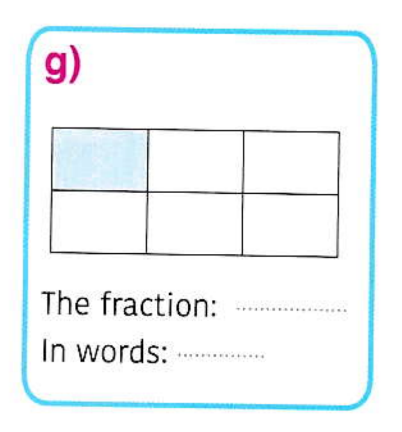
f)



The fraction: ....

In words: ....

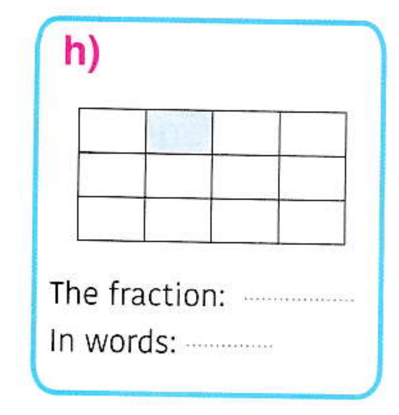
g)



The fraction: ....

In words: ....

h)



The fraction: ....

In words: ....

Parents' Tips:

- Let your child form his own figures that represent a unit fraction.

How can we compare unit fractions?

Which pizza will give me a bigger slice, cutting it into halves or cutting it into fourths?

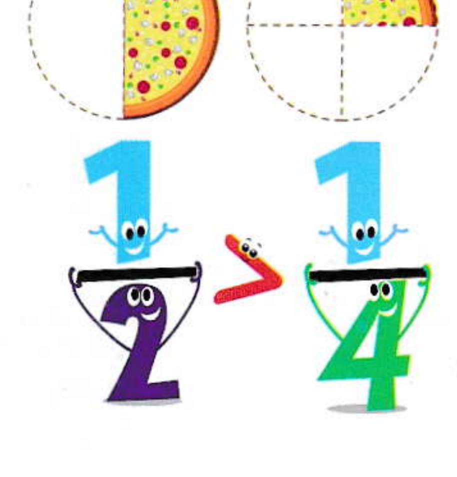
To know which fraction is the bigger:

First

Compare the denominators because the numerators are the same.

Second

Search for the denominator with the smaller number because the small denominator represents the larger pieces.



So, cutting 1 whole into 2 pieces cutting 1 whole into 4 pieces

WE NOTICE THAT:

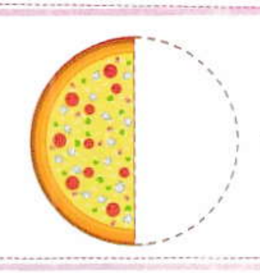
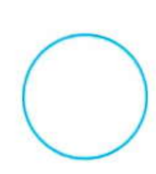
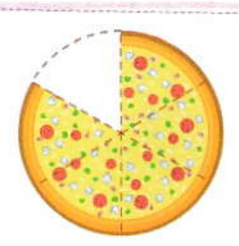
The denominator with the smaller number represents the bigger fraction.

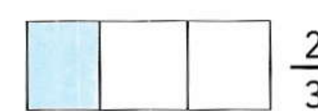
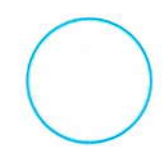
So, $\frac{1}{2} > \frac{1}{3} > \frac{1}{4} > \frac{1}{5} > \frac{1}{6} >$ and so on.

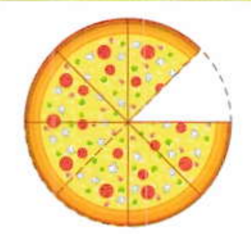
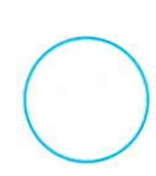
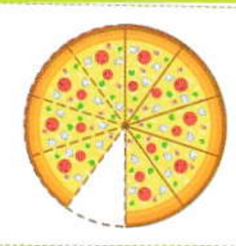
Parents' Tips:

- Ensure that your child understands that when the whole is divided into more units, each unit represents smaller parts.

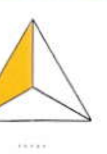
Activity 2 Compare using (< , > , =):

a)  $\frac{1}{2}$  $\frac{1}{6}$ 

b)  $\frac{2}{3}$  $\frac{3}{4}$

c)  $\frac{1}{8}$  $\frac{1}{10}$ 

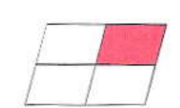
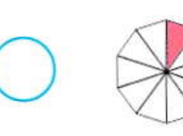
Activity 3 Write the fraction of the colored part, then compare using (< , > , =):

a) 

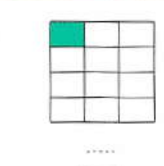
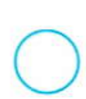
$\frac{.....}{.....}$ $\frac{.....}{.....}$

b)

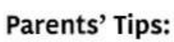
$\frac{.....}{.....}$ $\frac{.....}{.....}$

c)  

$\frac{.....}{.....}$ $\frac{.....}{.....}$

d)  

$\frac{.....}{.....}$ $\frac{.....}{.....}$



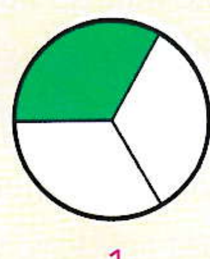
Parents' Tips:

- Ensure that your child recognizes that halves are the biggest fractional part, because the whole was only divided into 2 pieces.

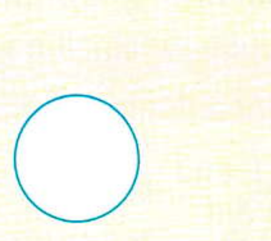
Activity 4

Draw and color to represent the following fractions, then compare using (< , > , =):

Example

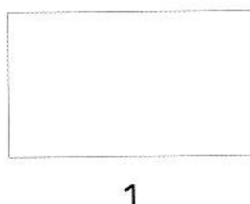


$\frac{1}{3}$

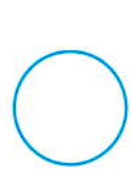


$\frac{1}{4}$

a)



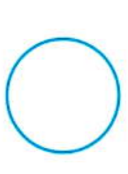
$\frac{1}{5}$



$\frac{1}{7}$

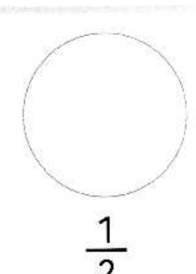
b)

$\frac{1}{8}$

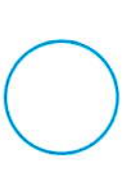


$\frac{1}{9}$

c)



$\frac{1}{2}$



$\frac{1}{6}$

Parents' Tips:

- Let your child know that when the whole is cut into fewer pieces, then the pieces are larger.

Read, then solve:

Example

Malek needs $\frac{1}{4}$ L of oil and $\frac{1}{5}$ L of milk to make a large number of cupcakes. Will Malek use more oil or more milk?

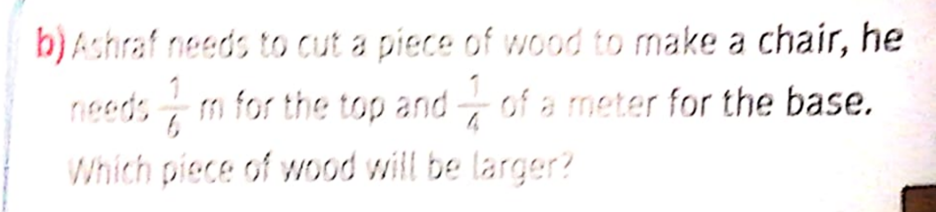
To find which he will use more, we have to compare between $\frac{1}{4}$ L and $\frac{1}{5}$ L.

$\frac{1}{4}$

He will use more oil.

a) Rahma had a chocolate cake while Sara had a vanilla cake of the same size. Rahma cut her cake into eighths while Sara cut her vanilla cake into sixths. Which part is larger $\frac{1}{6}$ or $\frac{1}{8}$?

The larger one will be the .... cake.



b) Ashraf needs to cut a piece of wood to make a chair, he needs $\frac{1}{6}$ m for the top and $\frac{1}{4}$ of a meter for the base. Which piece of wood will be larger?

The larger part will be ....

I learned

- Comparing different unit fractional parts.
- Explaining the relation between the size of the denominator and the size of the fraction as it relates to the whole.

Lesson 75 Unit fraction as a set of a whole

How can we represent the fraction of a set of objects?

Hana's father brought for her 6 blue birds and 1 yellow bird. Find the fraction of the set of birds that represents the yellow birds.

The fraction that represents 🐦 =

$$\frac{\text{Number of 🐦}}{\text{Total number of birds}} = \frac{1}{7}$$

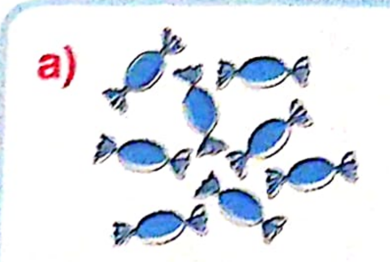
Activity 1 Look at the pictures, then answer:

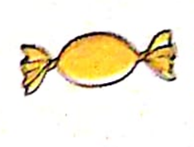
xample

w many butterflies are there the set? ..5... butterflies.

at fraction of the set is 🦋 ? $\frac{1}{5}$

a)





How many candies are there in the set? .... candies.

What fraction of the set is 🍬 ? $\frac{\dots}{\dots}$

ct:

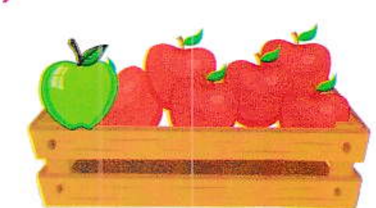
w with your child some mass concepts including grams and kilograms, as they are units o measure mass and that 1 kilogram = 1000 grams.

Activity 2 Complete:

a)

- My sundae has a set of .... scoops.
- .... scoops are chocolate.
- .... scoops are vanilla.
- My vanilla scoop fraction is ....

b)



- My basket has a set of .... apples.
- .... apples are red.
- .... apple(s) is/are yellow.
- My yellow apple fraction is ....

c)

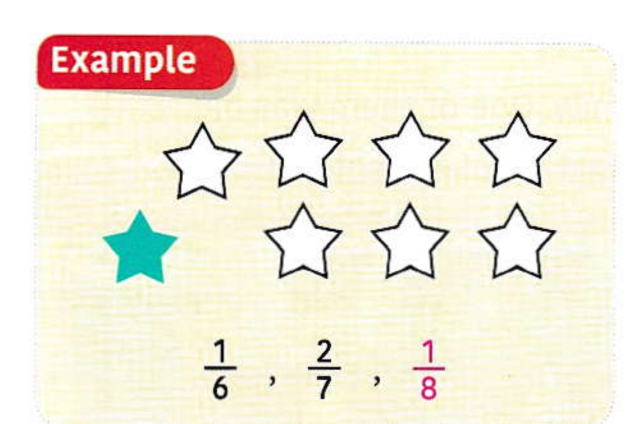
- There are .... balloons.
- .... balloons are big.
- .... balloon(s) is/are small.
- The fraction of the small balloons is ....

d)

- There are .... milk boxes.
- .... milk box(es) with chocolate.
- .... milk box(es) with vanilla.
- The fraction of milk boxes with vanilla is ....

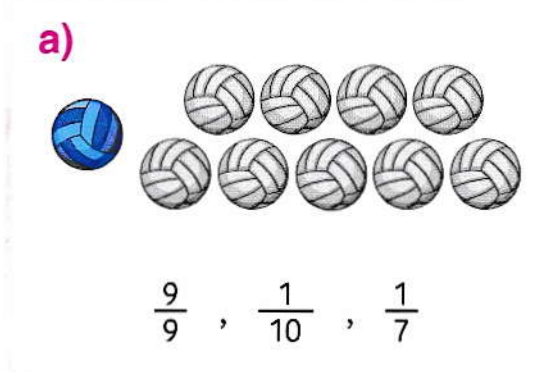
Activity 3 Choose the fraction that represents the colored shape in each set:

Example



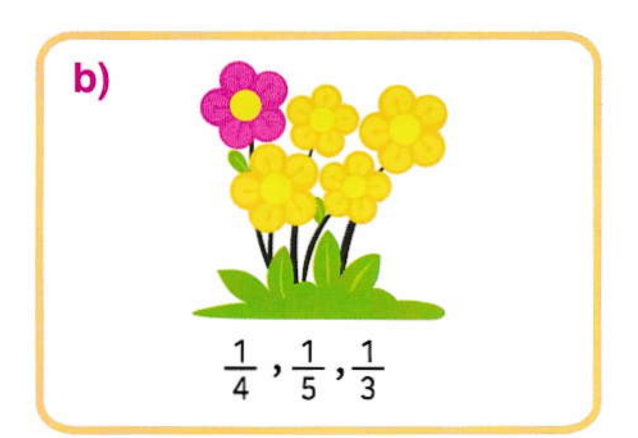
$\frac{1}{6}$, $\frac{2}{7}$, $\frac{1}{8}$

a)



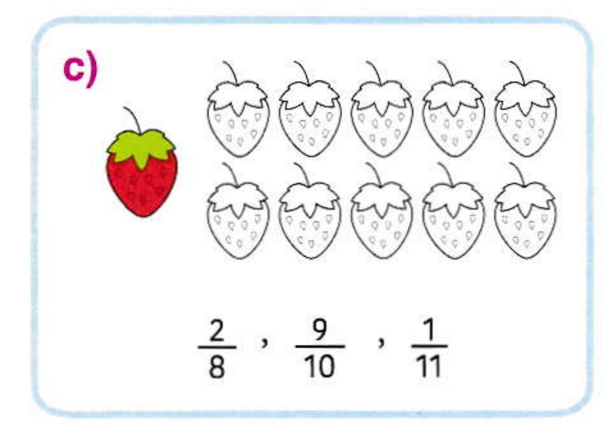
$\frac{9}{9}$, $\frac{1}{10}$, $\frac{1}{7}$

b)



$\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{3}$

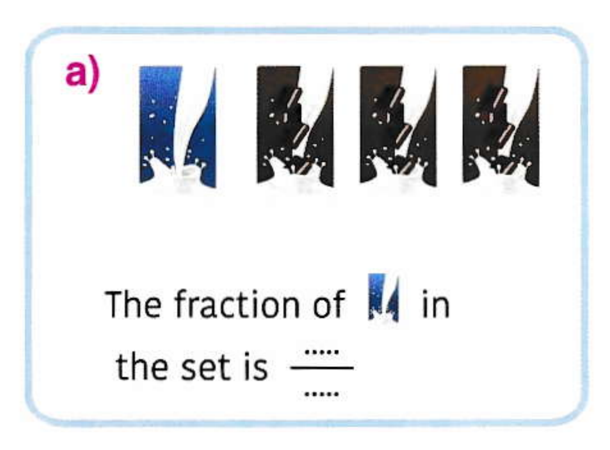
c)



$\frac{2}{8}$, $\frac{9}{10}$, $\frac{1}{11}$

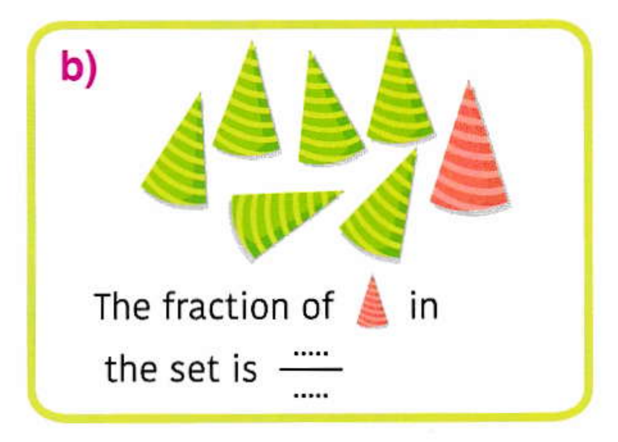
Activity 4 Write the fraction that represents the different colored part of each set:

a)



The fraction of [image] in the set is $\frac{.....}{.....}$

b)



The fraction of [image] in the set is $\frac{.....}{.....}$

Parents' Tips:

- Ensure that your child can determine the denominator each time when solving the problems above by counting the total objects in each set.

Read, draw then solve:

a) Mai brought 8 presents for her family. One of them was big, the rest were small. What is the fraction of the set of the small presents?

- There are .... presents.
- .... is a big present.
- .... are small presents.
- The fraction that represents the big present is $\frac{....}{....}$

b) Alyaa cut a watermelon into 10 parts. One part is small while the rest were big. What is the fraction of the big part of the watermelon?

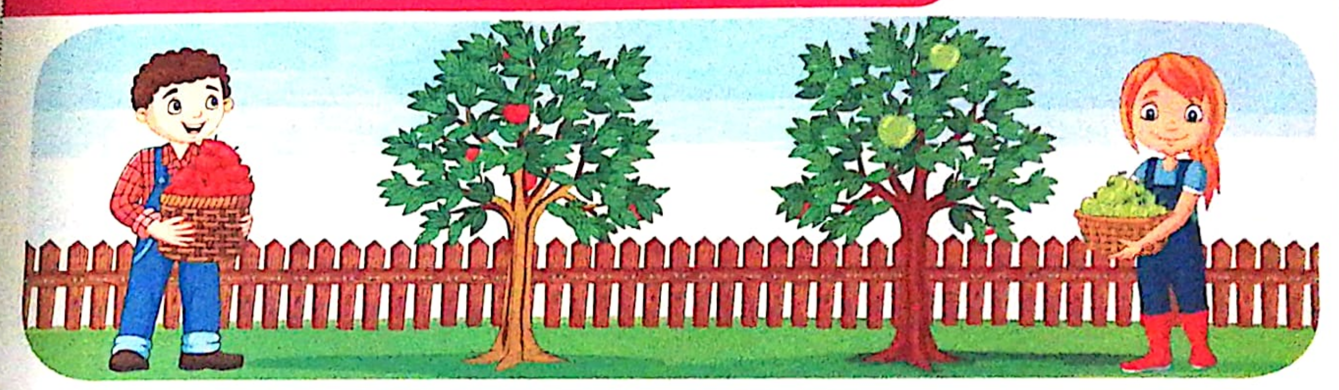
- ....
- ....
- ....
- ....

I learned

- Identifying unit fractions of a set.
- Solving story problems.

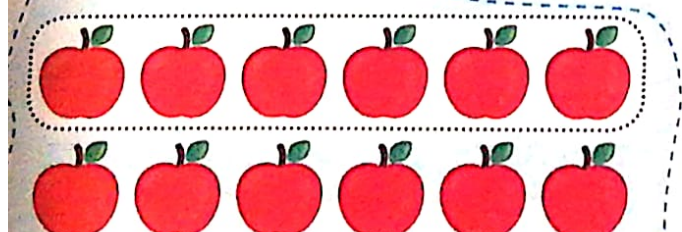
Comparing the same fractions of different wholes

How can we compare fractions of two sets?



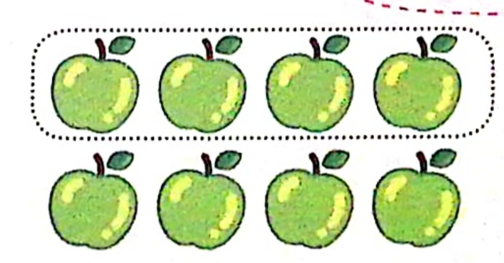
If Yassin collected 12 red apples while Noha collected 8 green apples. Which fraction will be the greater $\frac{1}{2}$ of Yassin's apples or $\frac{1}{2}$ of Noha's apples?

YASSIN



$\frac{1}{2}$ of the red apples is 6 apples.

NOHA



$\frac{1}{2}$ of the green apples is 4 apples.

The $\frac{1}{2}$ of the red apples is greater than the $\frac{1}{2}$ of the green apples even if they are both one-half because the two wholes are different.

nnect:

ve your child some problems and let him/her analyze his/her answer to find out if it's rrect or not.

Activity 1 Tick (✓) the right choice:

Which is the bigger, ... ?
half of an orange **or** half of a watermelon

( ) (✓)

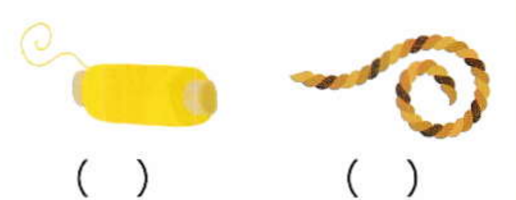
The half of the *watermelon* is bigger.

a) Which is the more, ... ?
half of a cup **or** half of a jar

( ) ( )

The half of .... is more.

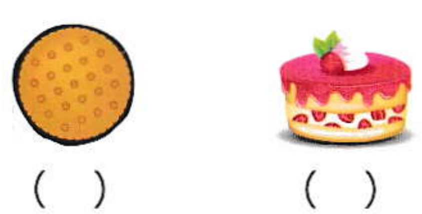
b) Which is the longer, ... ?
half of a string **or** half of a rope



( ) ( )

The half of .... is longer.

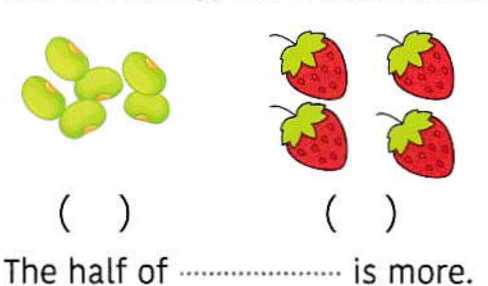
c) Which is the larger, ... ?
half of the cookie **or** half of the cake



( ) ( )

The half of .... is larger.

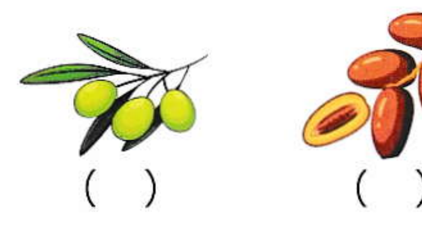
d) Which is the more, ... ?
half of beans **or** half of strawberries



( ) ( )

The half of .... is more.

e) Which is the bigger, ... ?
half of olives **or** half of dates



( ) ( )

The half of .... is bigger.

Parents' Tips:
- Let your child recognize that when the wholes are different, we get different quantities of the same fractions.

Read, then solve:

a) Noura likes to eat apple pies. She found 2 apple pies but different in size, one apple pie on the red table and the other apple pie on the blue table. Which one should she choose?

She should choose the apple pie which is on the .... table.

b) On the first day Nesreen picked 8 mangoes and put them in a basket. On the second day she picked 10 mangoes and put them in another basket. Which half of the baskets contains a more number of the mangoes?

1st day

2nd day

Half of the mangoes on the .... day is greater than half of the mangoes on the .... day.

I learned

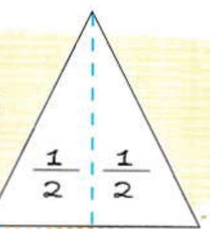
- Explaining why the size of the whole matters when comparing two unit fractions.

Equal parts of one whole

How many parts can make one whole?

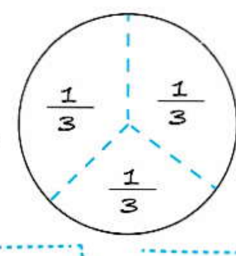
There are 2 halves that make one whole.

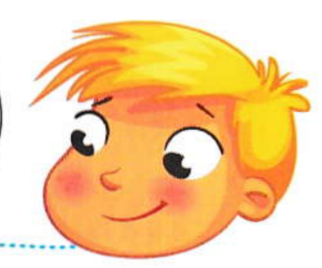
1 whole = $\frac{2}{2}$



There are 3 thirds that make one whole.

1 whole = $\frac{3}{3}$





There are 4 fourths that make one whole.

1 whole = $\frac{4}{4}$

$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$

There are 5 fifths that make one whole.

1 whole = $\frac{5}{5}$

$\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$

WE NOTICE THAT:

1 whole = $\frac{2}{2} = \frac{3}{3} = \frac{4}{4} = \frac{5}{5} = \frac{6}{6}$ and so on.

Connect:

- Let your child understand that each time we divide the whole into more parts, we get a smaller fraction.

Activity 1

Divide each shape to answer the following questions:

Example

How many thirds make one whole?

- 3 thirds
- 1 whole = $\frac{3}{3}$

$\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$

a) How many halves can make one whole?

- ....
- 1 whole = $\frac{.....}{.....}$

b) How many fifths can make one whole?

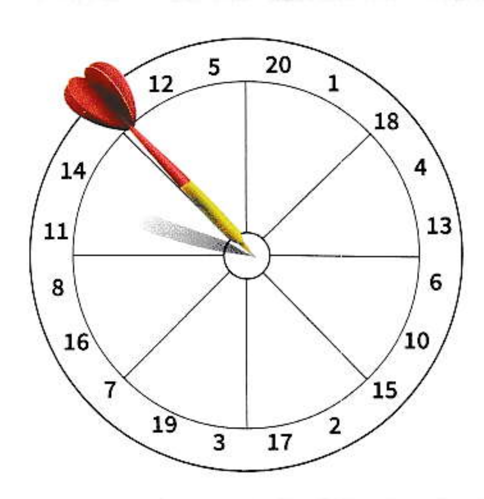
- ....
- 1 whole = $\frac{.....}{.....}$

c) How many fourths can make one whole?

- ....
- 1 whole = $\frac{.....}{.....}$

Activity 2

Color using the key:



2 parts in yellow

3 parts in red

1 part in green

2 parts in brown

How many parts are there?

- .... parts.
- 1 whole = ...

Activity 3 Match:

Two halves		Six sixths
(square)		(circle divided into three parts)
Three thirds		Four fourths
(rectangle divided into six parts)		(triangle divided into two parts)

- Writing and representing one whole as a fraction.

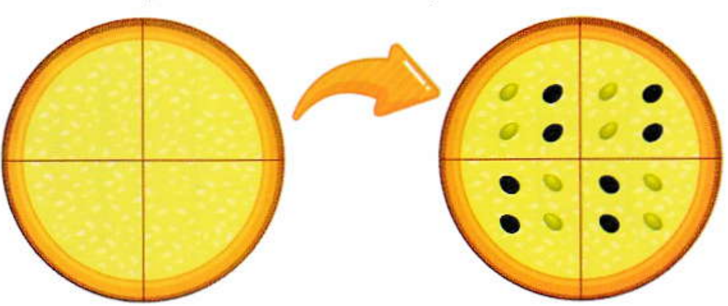
The relation between fraction and division

How can we determine the relation between fraction and division?

A baker wants to divide 16 olives equally on 4 fourths of a pizza. How many olives does he need to put on each fourth?

He can put 4 olives on each fourth.

That means $\frac{1}{4}$ of 16 is 4, also $\frac{1}{4}$ of 16 means $16 \div 4 = 4$



WE NOTICE THAT:

There's a relation between fraction and division.

$\frac{1}{2}$ of 8 means $8 \div 2 = 4$

$\frac{1}{3}$ of 21 means $21 \div 3 = 7$

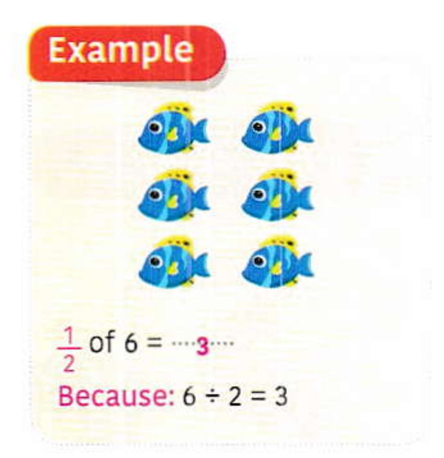
$\frac{1}{6}$ of 30 means $30 \div 6 = 5$

Connect:

- Revise with your child on division facts to help him/her understand the relation between fraction and division.

Activity 1 Complete the fraction equation:

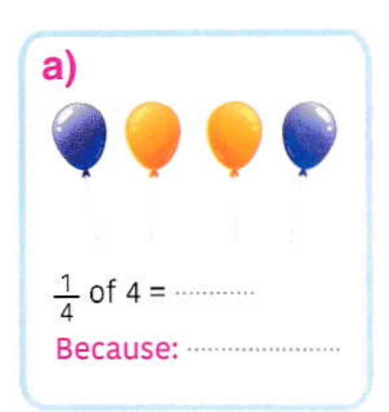
Example



$\frac{1}{2}$ of 6 = ...3....

Because: 6 ÷ 2 = 3

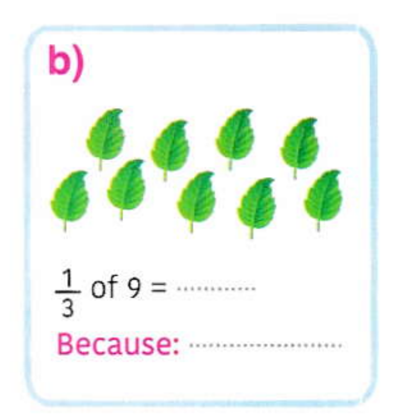
a)



$\frac{1}{4}$ of 4 = ...

Because: ....

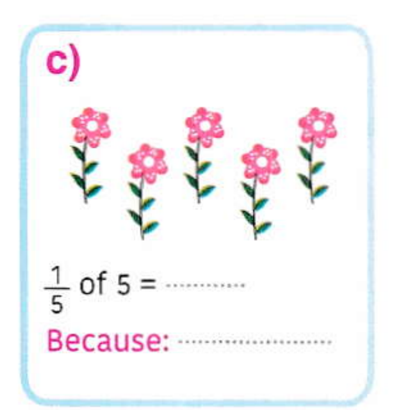
b)



$\frac{1}{3}$ of 9 = ...

Because: ....

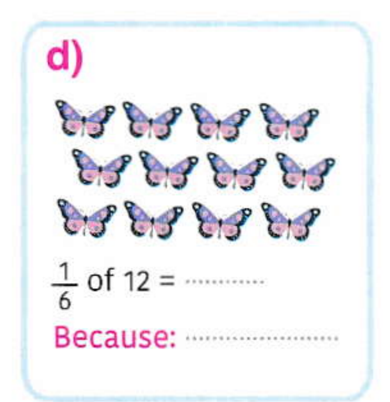
c)



$\frac{1}{5}$ of 5 = ...

Because: ....

d)



$\frac{1}{6}$ of 12 = ...

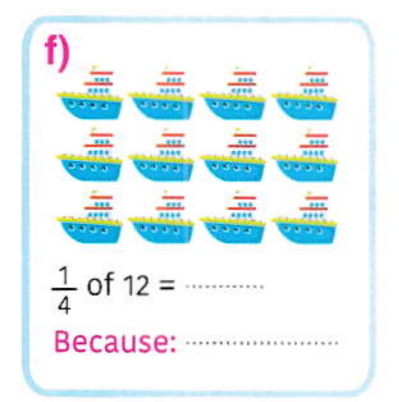
Because: ....

e)

$\frac{1}{3}$ of 6 = ...

Because: ....

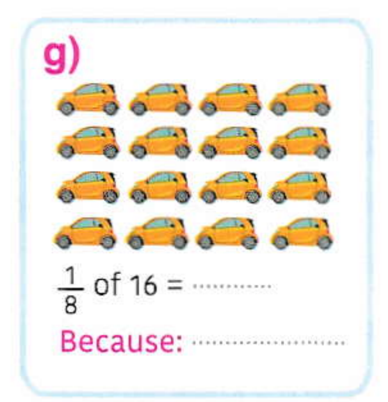
f)



$\frac{1}{4}$ of 12 = ...

Because: ....

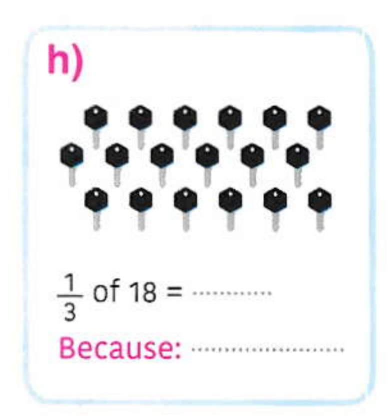
g)



$\frac{1}{8}$ of 16 = ...

Because: ....

h)



$\frac{1}{3}$ of 18 = ...

Because: ....

Parents' Tips:

- Practice with your child to make sure that he/she realizes the relation between fraction and division.

How can we divide a set of objects in different ways?

A teacher wants to divide 24 pens in different ways:

$24 \div 6 = 4$ pens

So, $\frac{1}{6}$ of $24 = 4$

$24 \div 4 = 6$ pens

So, $\frac{1}{4}$ of $24 = 6$

$24 \div 3 = 8$ pens

So, $\frac{1}{3}$ of $24 = 8$

$24 \div 2 = 12$ pens

So, $\frac{1}{2}$ of $24 = 12$

WE NOTICE THAT:

The set of objects can be divided into groups using different ways.

Activity 2 Read and solve:

a) Ahmed wants to divide 12 marbles among his friends, find the share of each if he has:

1) 4 friends

- .... ÷ .... = ... marbles

2) 3 friends

- .... ÷ .... = ... marbles

Parents' Tips:

- Encourage your child to explain how he/she can find the share of each friend in the above example.

b) A mother wants to divide 24 pounds equally among her 4 children. How many pounds will each child get?
Write the fraction that represents the share of each one.

....

....

....

If she divides the pounds equally among 3 children, how many pounds will each child get?
Write the fraction that represents the share of each one.

....

....

....

If she divides the pounds equally among 6 children, how many pounds will each child get?
Write the fraction that represents the share of each one.

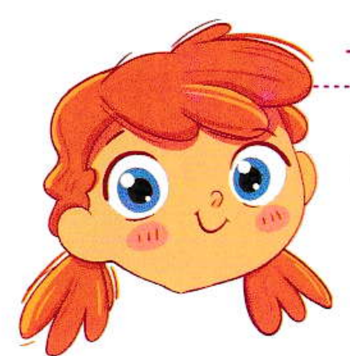
....

....

....

Parents' Tips:

- Ensure that your child remembers that each number has different factors as 18 (1 X 18 , 2 X 9 , 3 X 6).



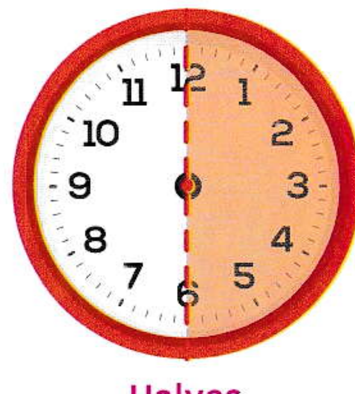
How can we read the time using fractions?

The clock is like a circle that can be divided into fractional parts.

Half: we draw a line from 12 to 6

One half of the clock has 30 minutes.

Because half of 60 is 30



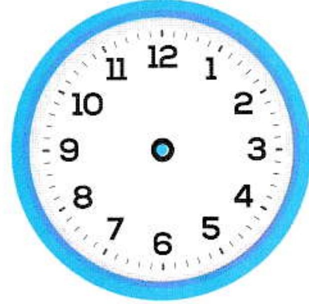
Halves

Color to divide the clock as required:

Divide the clock into fourths:

- Draw a line from .... to .... and from .... to ....
- One fourth of the clock has .... minutes.

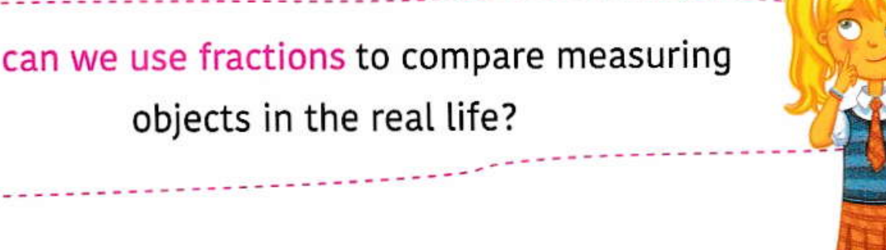
Divide the clock into thirds:



- Draw lines from the center to .... , ... and ....
- One third of the clock has .... minutes.

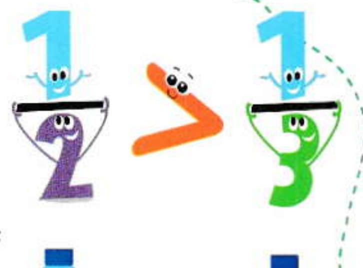
Parents' Tips:

- Give your child a clock and let him/her show you the time.



How can we use fractions to compare measuring objects in the real life?

Would you rather have $\frac{1}{2}$ or $\frac{1}{3}$ of a bottle of juice?



I like juice. • I will have $\frac{1}{2}$ of the bottle of juice because it has more.

I don't like juice. • I will have $\frac{1}{3}$ of the bottle of juice because it has less.

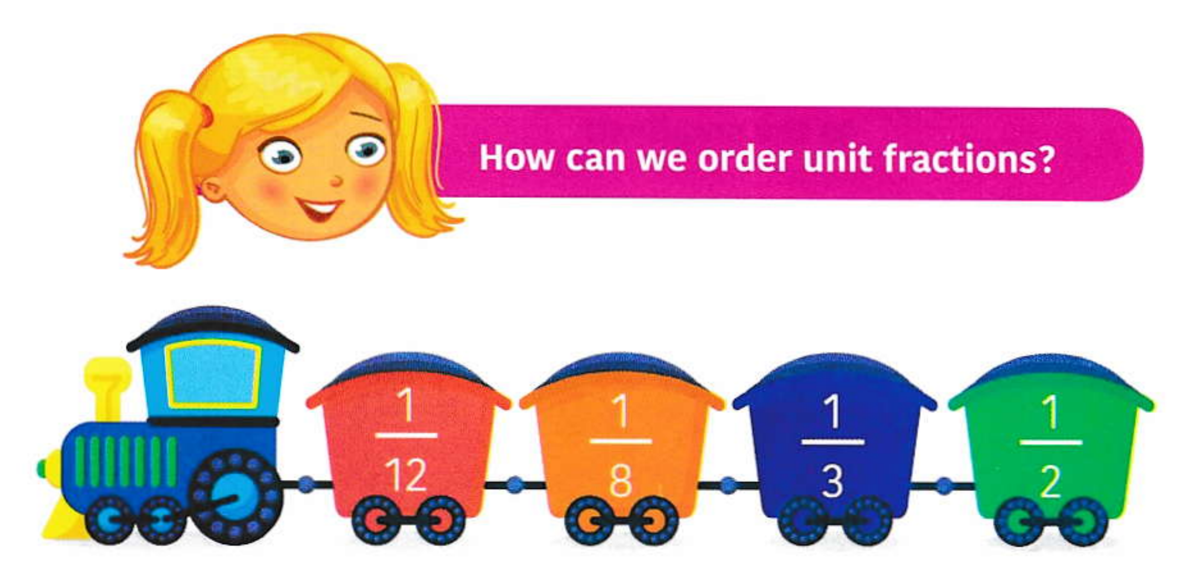
Activity 4 Answer the following questions:

a) Would you rather have $\frac{1}{2}$ or $\frac{1}{4}$ of a pizza?

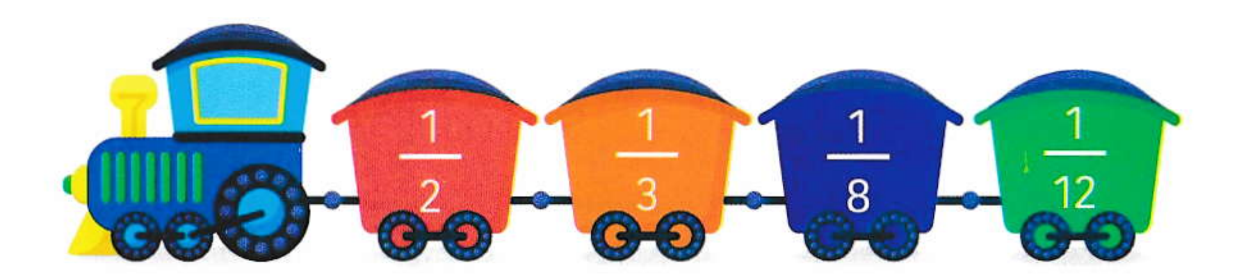
I like pizza. • I will have .... of a pizza.	I don't like pizza. • I will have .... of a pizza.

b) Would you rather have $\frac{1}{4}$ of a bag of candy or $\frac{1}{6}$?

I like candies. • I will have .... of a bag of candy.	I don't like candies. • I will have .... of a bag of candy.



- The smallest fraction must have the biggest denominator.



- The biggest fraction must have the smallest denominator.

Activity 5

Arrange the following fractions from the smallest to the greatest:

$\frac{1}{8}$ $\frac{1}{2}$ $\frac{1}{10}$ $\frac{1}{11}$ $\frac{1}{3}$

The order is: ....

Parents' Tips:

- Ensure that your child will order unit fractions in ascending or descending order in a correct way.

Order the following fractions from the greatest to the smallest:

a)

$\frac{1}{6}$ $\frac{1}{5}$ $\frac{1}{2}$ $\frac{1}{10}$ $\frac{1}{8}$

The order is: ....

b)

$\frac{1}{9}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{2}$ $\frac{1}{7}$

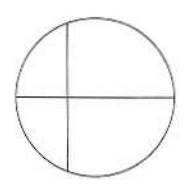
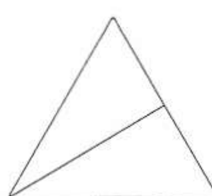
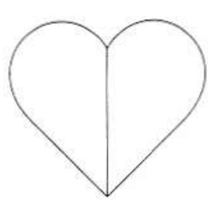
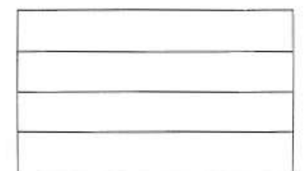
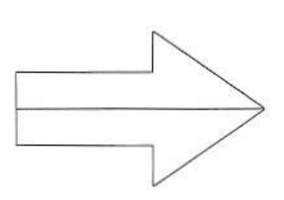
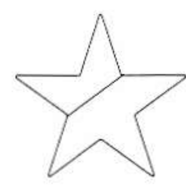
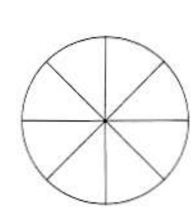
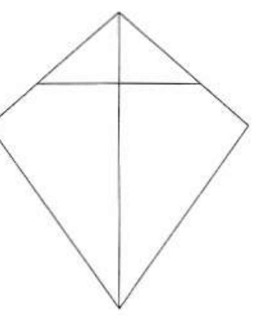
The order is: ....

I learned

- The reason for learning fractions in real-life applications.
- Dividing a set into equal parts.
- Determining the quantity in each fractional part of a set.
- Explaining the relationship between fraction & division.

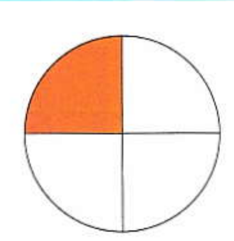
General Activities on Chapter 2

1 Color the shapes that are divided equally:

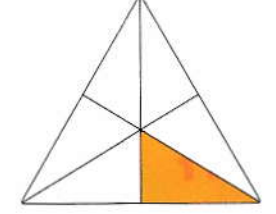
2 Circle the name which describes the shaded part:

a)



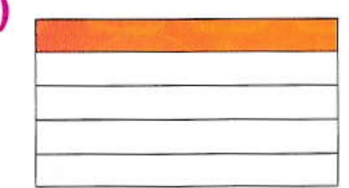
1) Three fourths
2) One fourth

b)



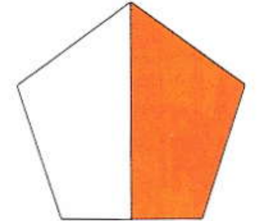
1) One sixth
2) One ninth

c)



1) One fourth
2) One fifth

d)



1) One half
2) Two halves

3 Find the missing fractions:

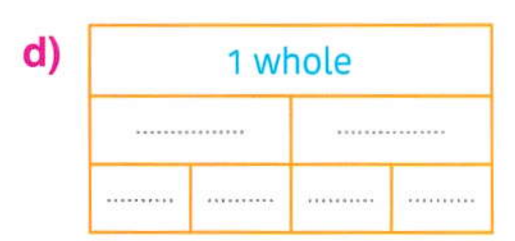
a)

1 whole			
....	....	....	....

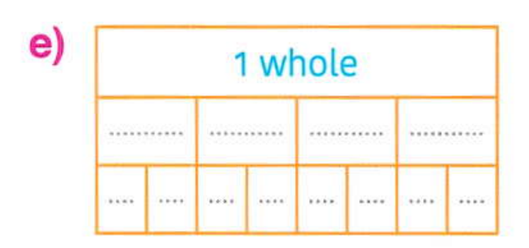
b)

c)

d)



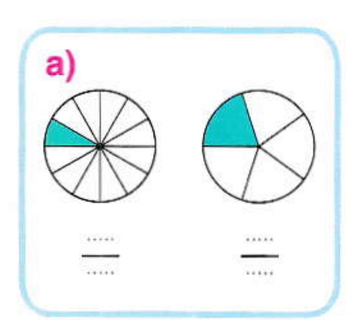
e)



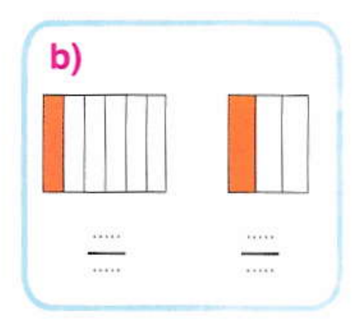
f)

4 Write the fraction of each shaded part, then circle the greatest fraction:

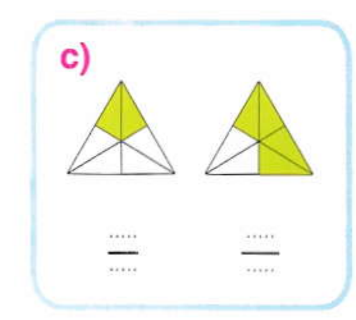
a)



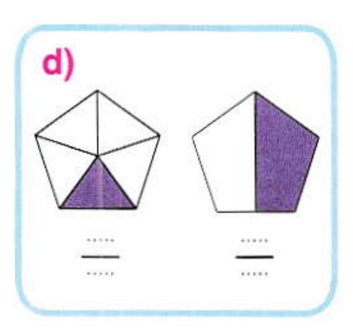
b)



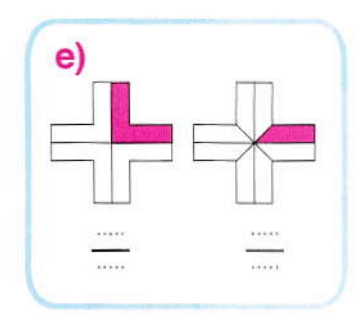
c)



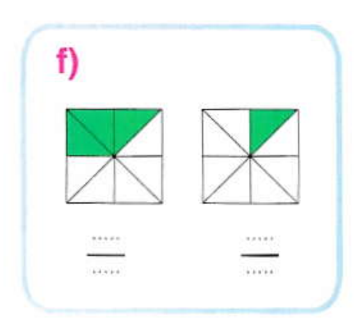
d)



e)



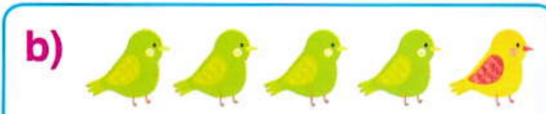
f)



5 Complete:

a)

- Total number of donuts = ...
- .... red donut(s).
- .... blue donut(s).
- The fraction of the blue donuts is ....

b) 

- Total number of birds = ...
- .... green bird(s).
- .... yellow bird(s).
- The fraction of the yellow bird is ....

c)

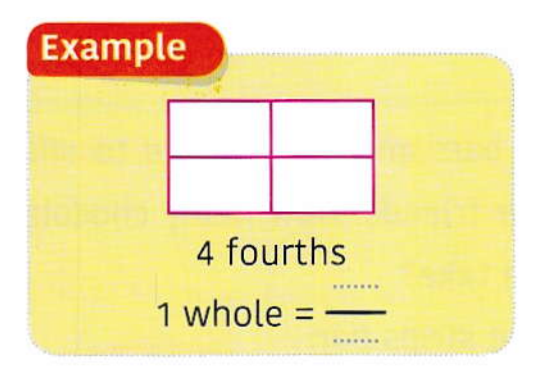
- Total number of flowers = ...
- .... small flower(s).
- .... big flower(s).
- The fraction of the big flowers is ....

d)

- Total number of butterflies = ...
- .... blue butterfly.
- .... orange butterfly.
- The fraction of the orange butterfly is ....

6 Draw □ / ▭ / ○ / △ to represent each fraction as the example:

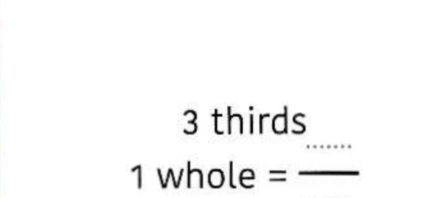
Example



4 fourths

1 whole = $\frac{.......}{.......}$

a)



3 thirds

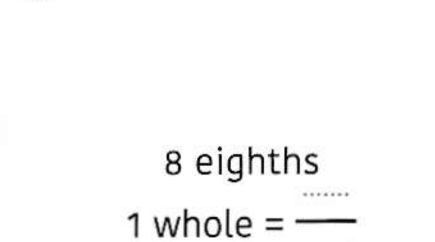
1 whole = $\frac{.......}{.......}$

b)

6 sixths

1 whole = $\frac{.......}{.......}$

c)

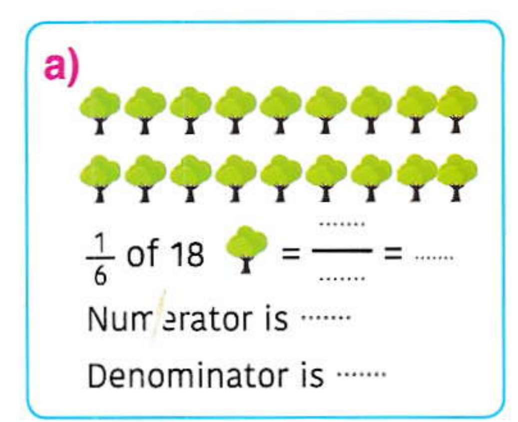


8 eighths

1 whole = $\frac{.......}{.......}$

7 Write the fraction, then complete:

a)



$\frac{1}{6}$ of 18 = $\frac{\text{.......}}{\text{.......}}$ = ...

Numerator is ....

Denominator is ....

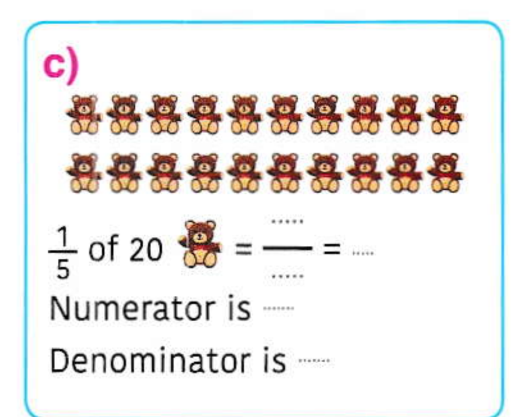
b)

$\frac{1}{4}$ of 8 = $\frac{\text{.......}}{\text{.......}}$ = ...

Numerator is ....

Denominator is ....

c)

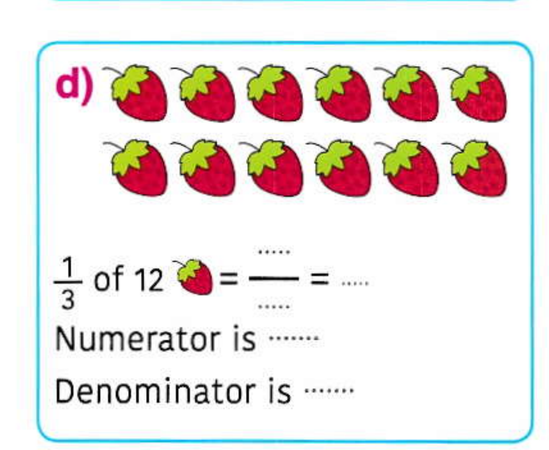


$\frac{1}{5}$ of 20 = $\frac{\text{.....}}{\text{.....}}$ = ...

Numerator is .....

Denominator is .....

d)



$\frac{1}{3}$ of 12 = $\frac{\text{.....}}{\text{.....}}$ = ...

Numerator is ....

Denominator is ....

8 Read and solve:

a) Rahma bought 12 chocolate bars and she wanted to share them equally among 3 of her friends. How many chocolate bars would each one of them take?

Represent your answer on the strips bar:

....

....

....

....

....

b) Samir bought 10 books, then he gave $\frac{1}{2}$ of them to his friend Alaa, he bought another 4 books and gave $\frac{1}{2}$ of them to his friend Khaled.

Which one of his friends had more number of books?

....

....

....

....

....

c) A toy store had 4 boxes that weighed a total of 32 kilograms if all boxes have the same weight. How much did each box weigh?

Represent your answer by fraction and division equations.

....

....

....

....

....

Connect on Chapter 2

1 Divide each clock as required in each figure:

a) Divide the clock into halves.

....

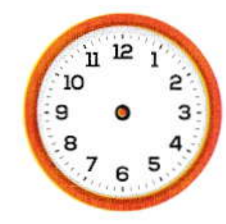
- One half of the clock has .... minutes.

b) Divide the clock into thirds.

....

- One third of the clock has .... minutes.

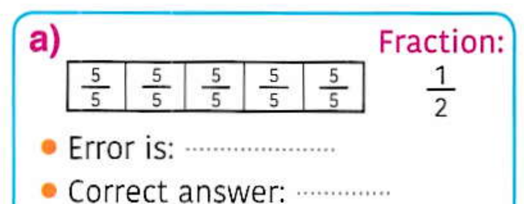
c) Divide the clock into fourths.



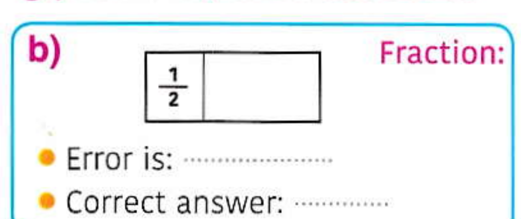
....

- One fourth of the clock has .... minutes.

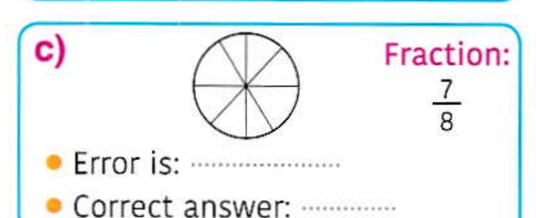
2 Find the error in each of the following problems, then correct it:



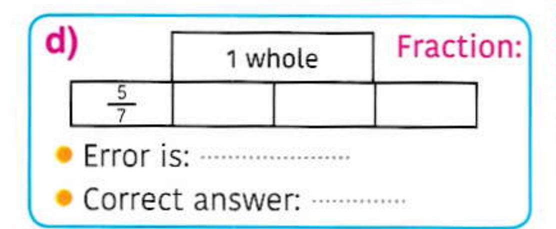
- Error is: ....
- Correct answer: ....



- Error is: ....
- Correct answer: ....



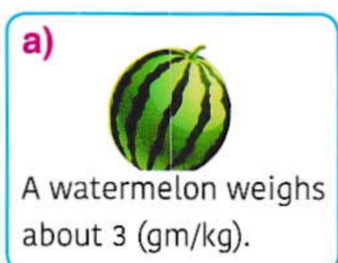
- Error is: ....
- Correct answer: ....



- Error is: ....
- Correct answer: ....

3 Circle the suitable unit of weight for each of the following:

a)

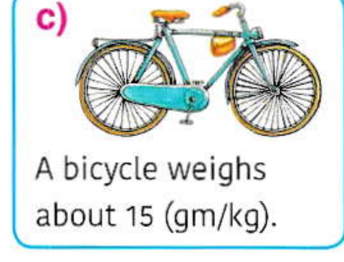


A watermelon weighs about 3 (gm/kg).

b)

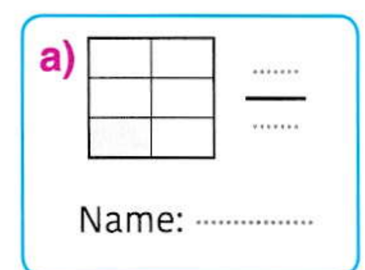
An apple weighs about 80 (gm/kg).

c)



A bicycle weighs about 15 (gm/kg).

1) Write a fraction and its name to show the shaded part:

a) 

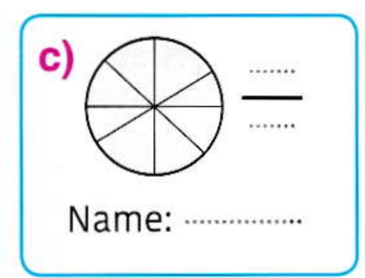
$\frac{\dots}{\dots}$

Name: ....

b)

$\frac{\dots}{\dots}$

Name: ....

c) 

$\frac{\dots}{\dots}$

Name: ....

2) Mai had 8 cookies, she accidentally dropped 2 cookies and the dog ate them. What fraction of cookies was left with her? Draw fraction strips to show your answer.

- First step: ....
- Second step: ....
- Number of cookies left with Mai = ... cookies.

3) Order the following fractions from the smallest to the greatest:

$\frac{1}{9}$, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{8}$, $\frac{1}{5}$

- The order is: .... , ... , ... , ... , ...

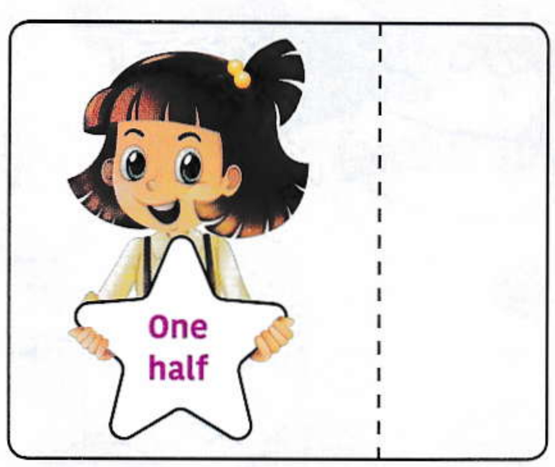
A PIECE OF PIE!

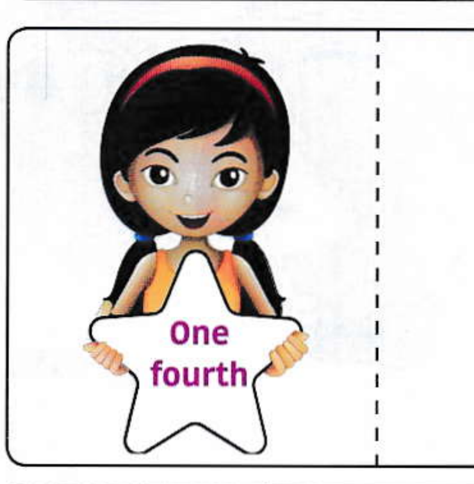
Directions:
- Read the direction in each box.
- Color the correct pieces of pizza.
- Write the fraction that represents colored parts.

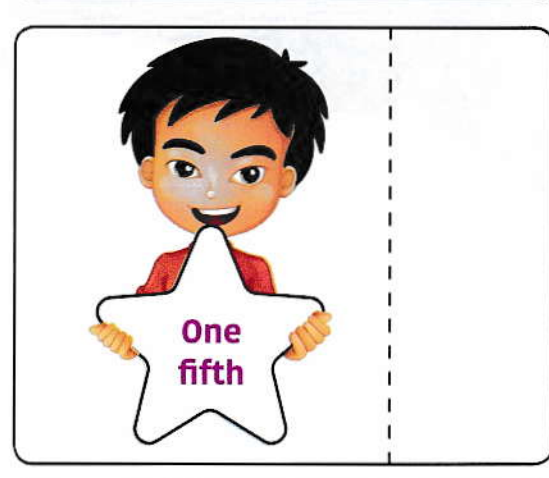
Color 2 pieces	Color 5 pieces	Color 1 piece
I colored $\frac{\cdots}{\cdots}$	I colored $\frac{\cdots}{\cdots}$	I colored $\frac{\cdots}{\cdots}$
Color 1 piece	Color 3 pieces	Color 2 pieces
I colored $\frac{\cdots}{\cdots}$	I colored $\frac{\cdots}{\cdots}$	I colored $\frac{\cdots}{\cdots}$
Color 8 pieces	Color 6 pieces	Color 7 pieces
I colored $\frac{\cdots}{\cdots}$	I colored $\frac{\cdots}{\cdots}$	I colored $\frac{\cdots}{\cdots}$

FRACTION SUPER STAR

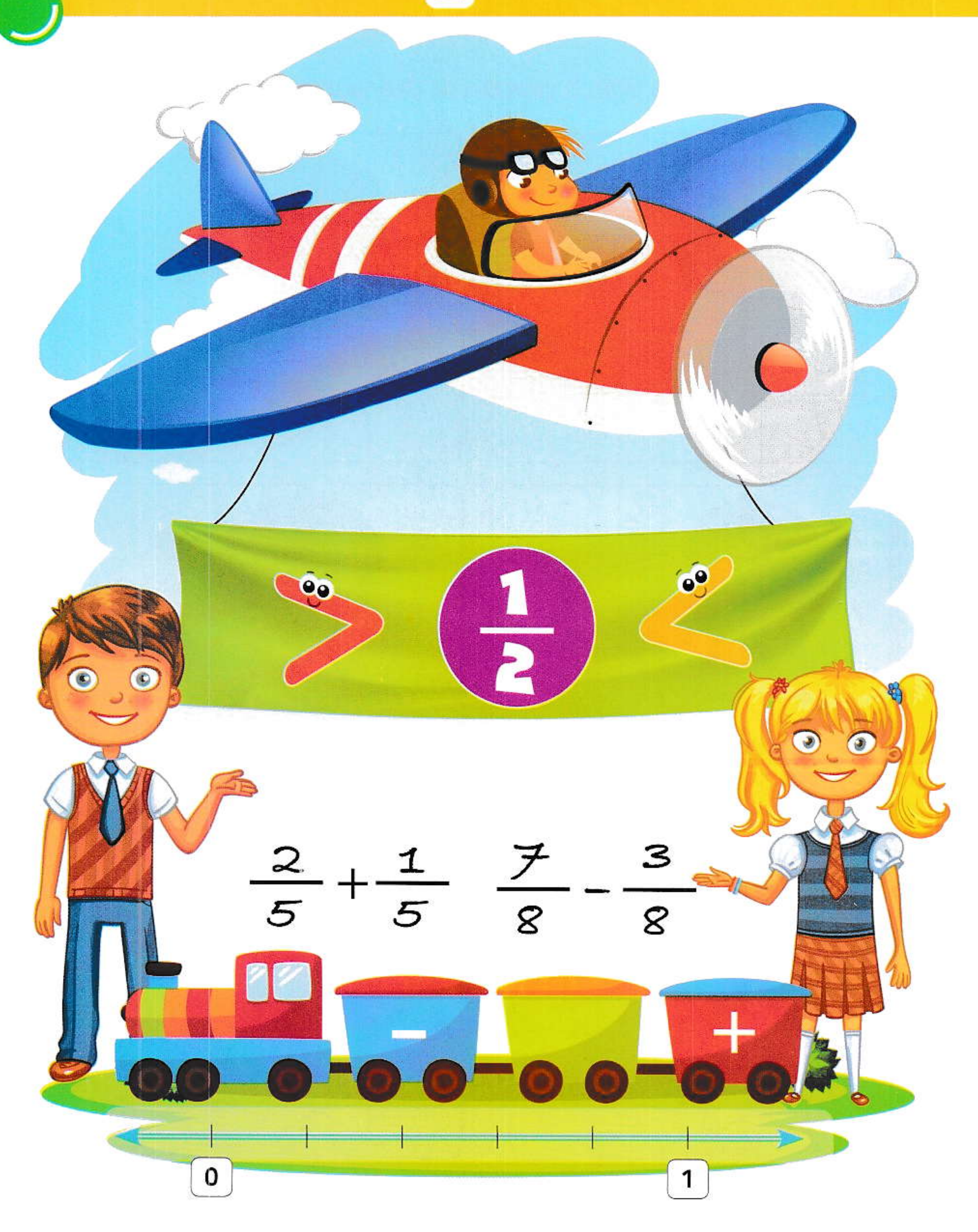
Write the fractions which represent the words:







Chapter 3



Pacing Guide

Lesson	Instructional Focus	Key vocabulary
Lessons 81 & 82	**Representing fractions on the number line** • Use models to show fractions on the number line. • Show fractions on the number line to solve story problems. • Given a fraction, explain the relationship between the numbers of equal parts on the number line and the denominator. • Define the numerator and denominator in their own words and provide examples.	• Eighths • Equal parts • Fourths • Fraction • Fractional part • Halves • Number line • Sixths • Thirds • Denominator • Numerator • Unit fraction
Lesson 83	**Comparing fractions using the number line** • Locate unit fractions on the number line (0 to 1). • Compare unit fractions on the number line between 0 and 1.	• Comparison • Greater than • Less than • Unit fraction
Lesson 84	**(A) Proper fractions** **(B) Comparing proper fractions** • Model fractions with numerators greater than 1.	• Greater than • Key • Less than • Line plot • Numerator • Proper fraction • Unit fraction
Lesson 85	**Locating proper fractions on the number line** • Express a given number in the expanded form. • Divide a number line into a given number of equal parts. • Locate proper fractions on the number line. • Draw models of fractions using shapes or sets.	
Lessons 86 & 87	**(A) Proper fraction of a set** • Count forward and backward by fractions. • Read and write proper fractions. **(B) Using hypothesis for comparing fractions** • Compare unit and proper fractions. • Compare two fractions with the same denominator. • Compare two fractions with the same numerator. • Explain how to compare fractions.	• Hypothesis
Lesson 88	**Adding fractions with the same denominators** • Order four fractions from the least to the greatest or the greatest to the least. • Add two fractions with the same denominator. • Explain the importance of common denominators when adding fractions.	• Add • Common • Sum
Lesson 89	**Subtracting fractions** • Subtract fractions with the same denominator. • Explain how to add and subtract fractions with common denominators.	• Common • Difference • Subtract
Lesson 90	**Fraction story problems** • Apply understanding of fractions to solve real-world problems. • Write a real-world story problem involving fractions.	

Representing fractions on the number line

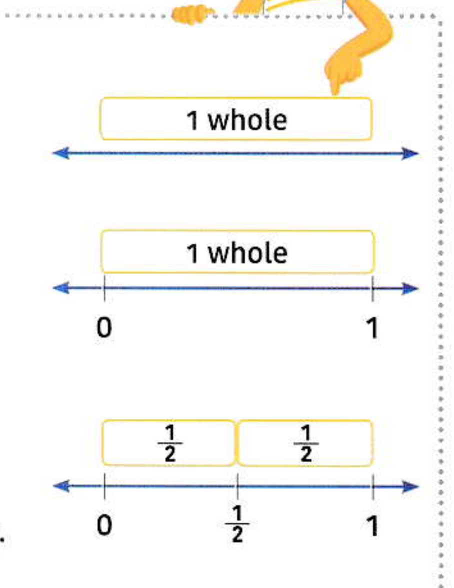
How can we show fractions on the number line?

To represent $\frac{1}{2}$ on the number line, follow these 3 steps:

Step 1: Draw a line to represent 1 whole strip model.

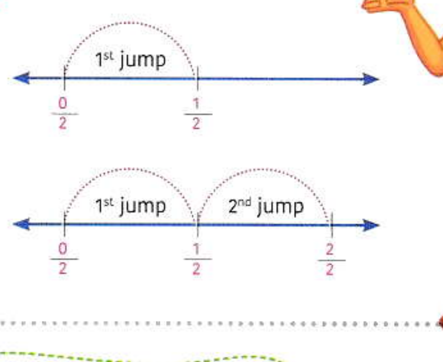
Step 2: Label the line with 0 at the left end and with 1 at the right end of the line.

Step 3: Divide the 1 whole into 2 equal parts, then make a mark on the number line to represent $\frac{1}{2}$.



What does each number on the number line represent?

- Since we need to show $\frac{1}{2}$ which has a denominator 2, so:
- Zero shows that we didn't move; we remain still at zero halves $= \frac{0}{2}$
- 1st jump shows one half $= \frac{1}{2}$
- 2nd jump shows that we complete the 1 whole as two halves $= \frac{2}{2}$

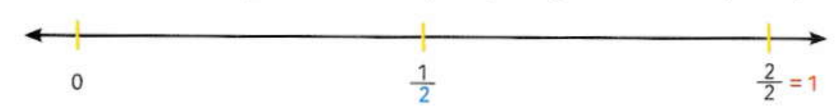


Connect:

- Discuss with your child how many unit fractions are in one whole and the definition of a unit fraction.

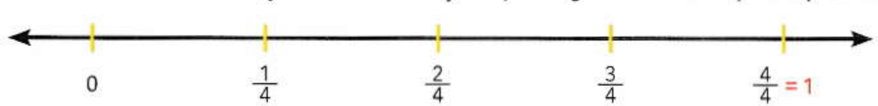
How can we represent fractions on the number line?

Halves: Divide the line (from 0 to 1) equally into 2 equal parts.



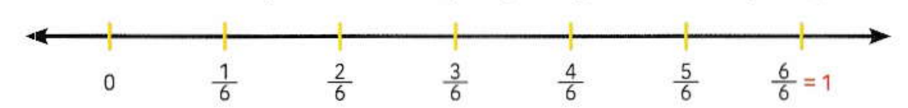
Thirds: Divide the line (from 0 to 1) equally into 3 equal parts.

Fourths: Divide the line (from 0 to 1) equally into 4 equal parts.

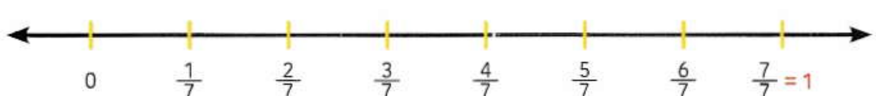


Fifths: Divide the line (from 0 to 1) equally into 5 equal parts.

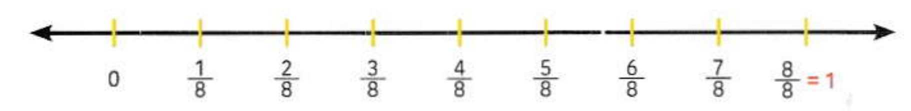
Sixths: Divide the line (from 0 to 1) equally into 6 equal parts.



Sevenths: Divide the line (from 0 to 1) equally into 7 equal parts.



Eighths: Divide the line (from 0 to 1) equally into 8 equal parts.

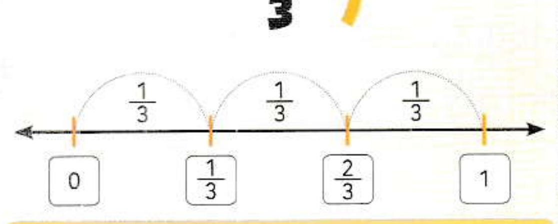


Parents' Tips:

- Let your child draw his/her own number line using his/her fraction strips.

Activity 1 Represent the following fractions on the number line:

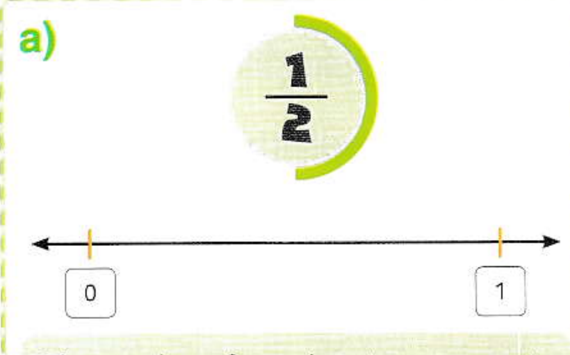
Example



The number of equal parts = 3 parts

$1 = \frac{3}{3}$

a)



The number of equal parts = ... parts

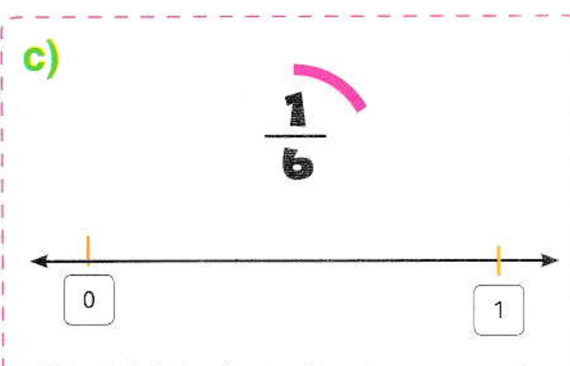
$1 = \frac{\ldots}{\ldots}$

b)

The number of equal parts = ... parts

$1 = \frac{\ldots}{\ldots}$

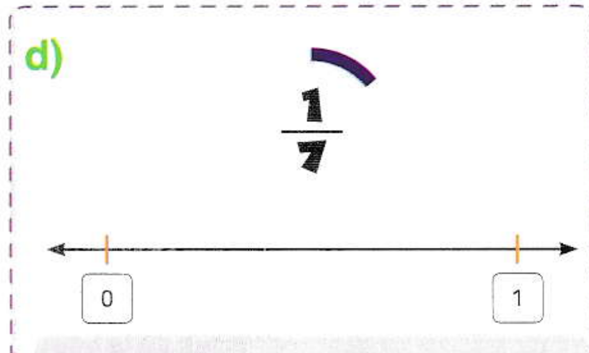
c)



The number of equal parts = ... parts

$1 = \frac{\ldots}{\ldots}$

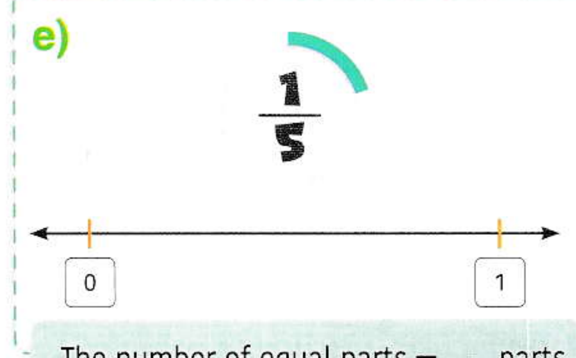
d)



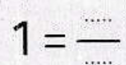
The number of equal parts = ... parts

$1 = \frac{\ldots}{\ldots}$

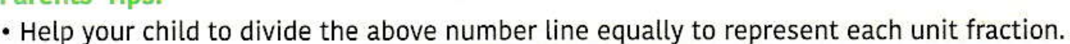
e)



The number of equal parts = ... parts



$1 = \frac{\ldots}{\ldots}$



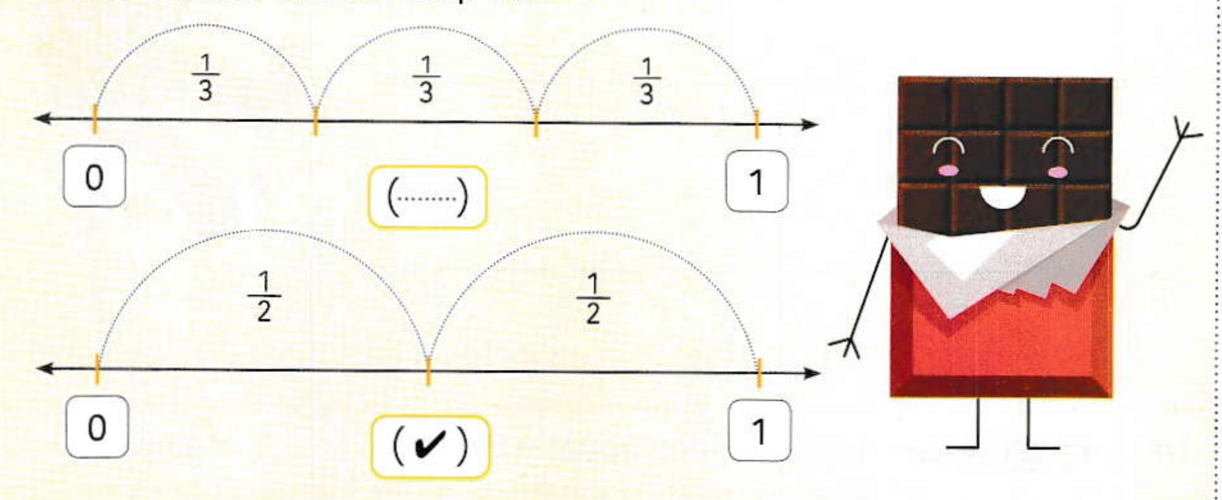
Parents' Tips:

- Help your child to divide the above number line equally to represent each unit fraction.

Read the problems, then tick (✓) the number line that will help to solve it:

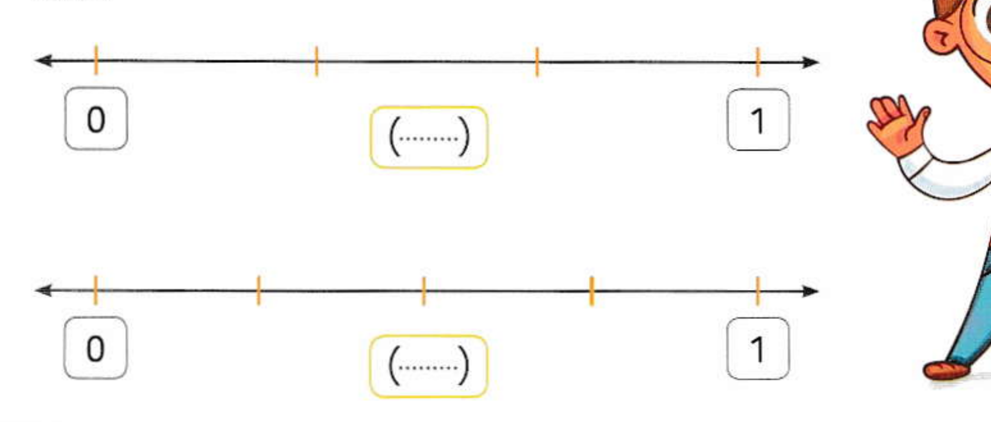
Example

Farida had a chocolate bar. She wants to give $\frac{1}{2}$ of it to her sister. Which number line can help her?



The number line which is divided into 2 equal parts.

a) Omar had a meter of wood. He needs $\frac{1}{3}$ of meter, to make a bird nest. Which number line can help him?

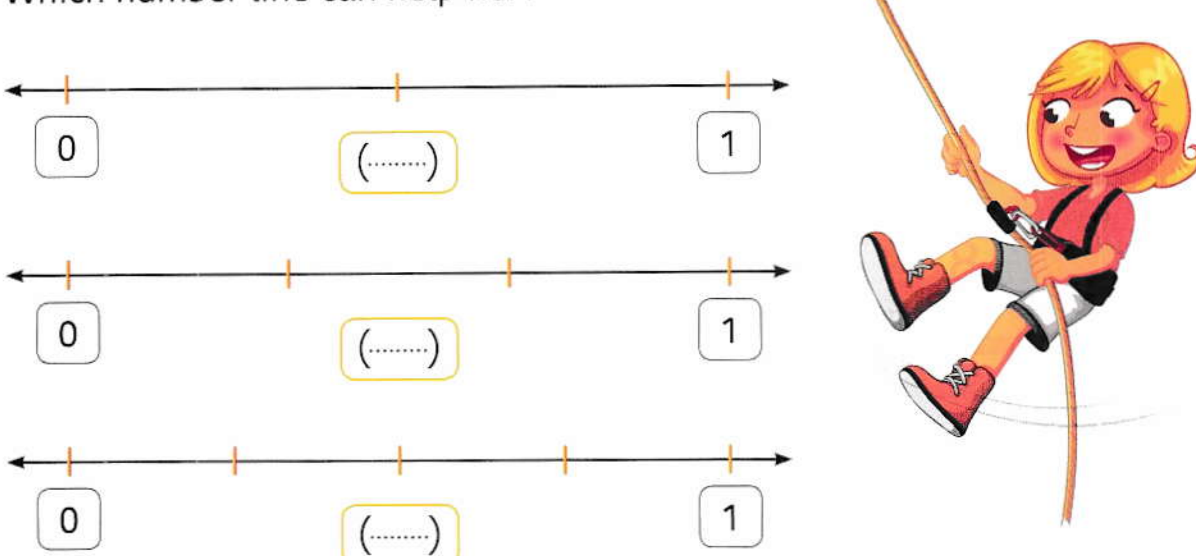


The number line which is divided into .... parts.

Parents' Tips:

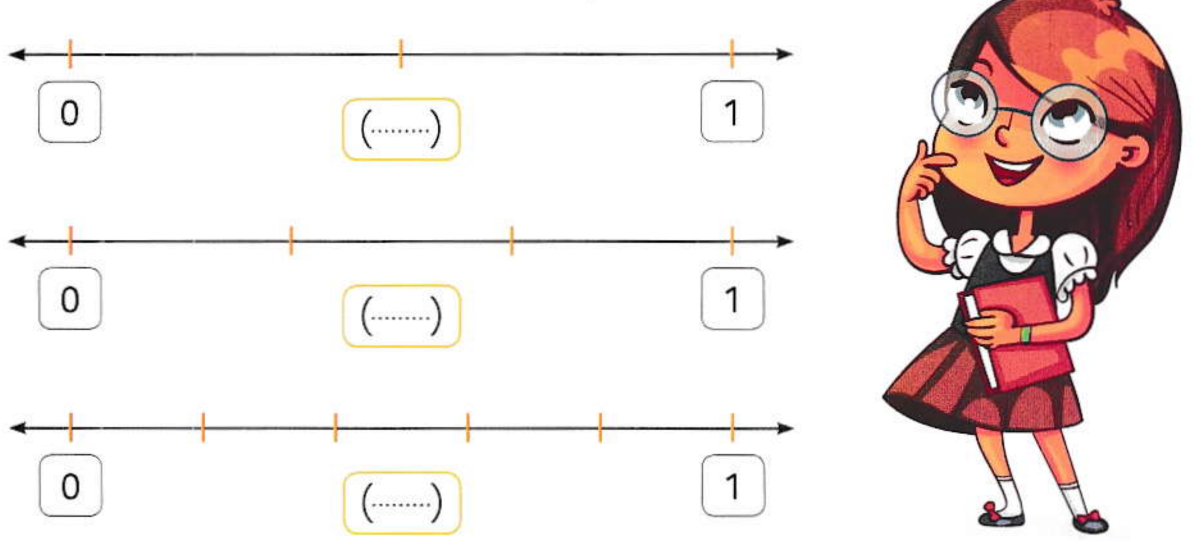
Ensure that your child understands that the denominator tells us the number of equal parts we need to divide the number line into.

b) Laila had a rope. She needs $\frac{1}{4}$ of it for her project. Which number line can help her?



The number line which is divided equally into .... parts.

c) Faten had a long necklace. She needs to cut $\frac{1}{5}$ of it to make it shorter. Which number line can help her?

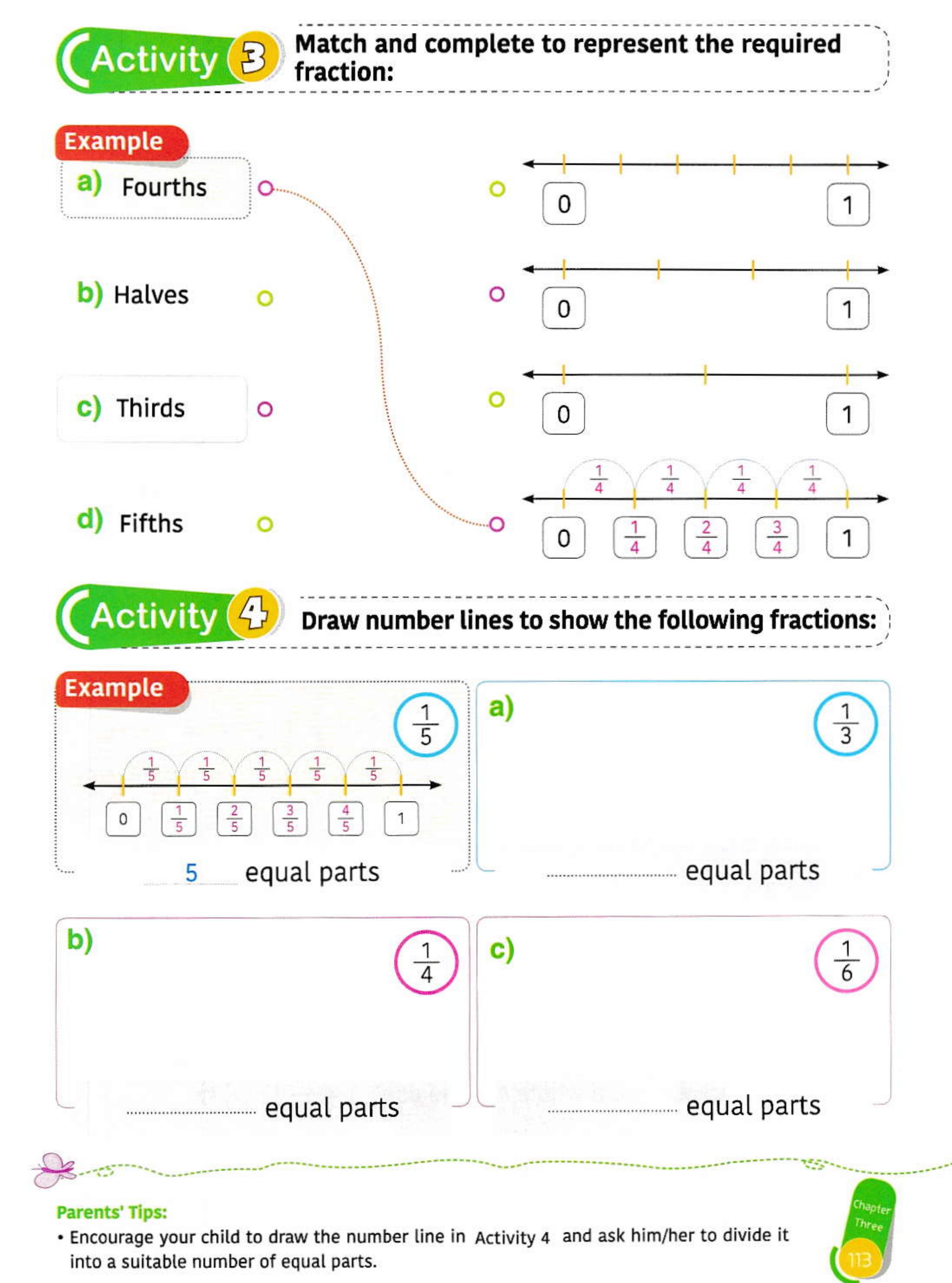


The number line which is divided equally into .... parts.

Parents' Tips:

- Encourage your child to label each number line to help him/her to choose his right answer.

Activity 3 Match and complete to represent the required fraction:



Activity 4 Draw number lines to show the following fractions:

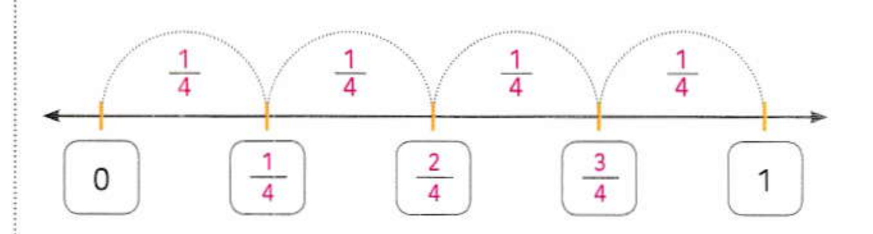
Parents' Tips:

- Encourage your child to draw the number line in Activity 4 and ask him/her to divide it into a suitable number of equal parts.

Read, then draw a number line to represent your answer:

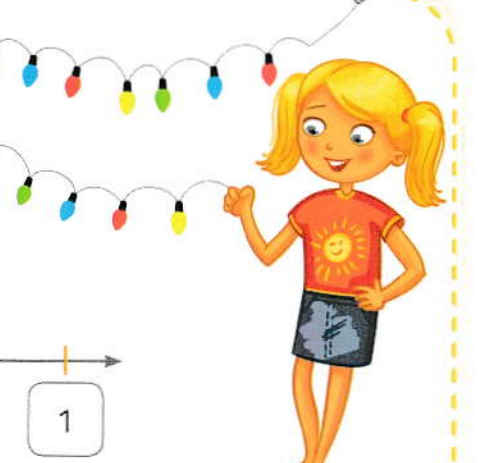
Example

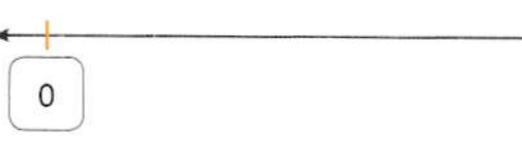
Mohamed bought 1 meter of electric wire to fix his electric tools. He cut the wire into 4 equal pieces. He used 1 piece to fix 1 electric tool. How many electric tools can he fix?

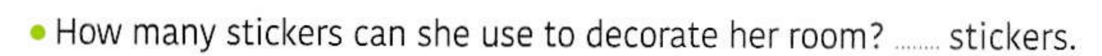


- How many electric tools can he fix? ....4.... tools.
- What fraction of the whole did he use? $1 = \frac{4}{4}$

a) Rasha needs to decorate the wall in her room using 1 meter of pink sticker. She divided the sticker into 8 equal parts. Draw a number line to show what she did:







- How many stickers can she use to decorate her room? .... stickers.
- What fraction of a whole did she use? $1 = \frac{\dots}{\dots}$

Parents' Tips:

- Ensure that your child can use a suitable number line to help him/her in solving the story problem.

b) Amir is planting carrots in his 1 meter long rectangular plant box. He divides the plant box into equal sections; each of $\frac{1}{7}$ meter in length, then he planted 1 seed in each section. Draw a number line to represent the plant box.

- How many seeds can he plant? ....

c) Ramy needs to cut 1 meter of rope into 5 equal pieces. Draw the number line that shows how he could cut the rope.

- What fraction of the rope represents one part? ....

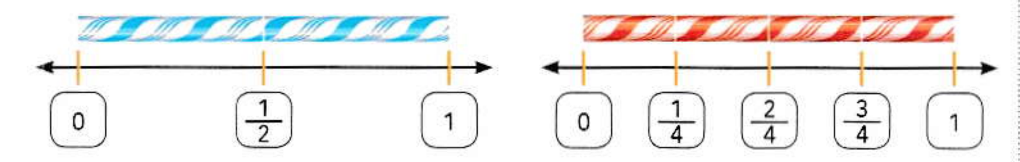
I learned

- Using models to show fractions on the number line.
- Showing fractions on the number line to solve story problems.

Comparing fractions using the number line

How can we compare fractions on the number line?

Amr has a blue stick of candy that he cut into 2 equal pieces, his sister Lamia has a red stick of candy that she cut into 4 equal pieces. Who has the biggest piece of candy stick?



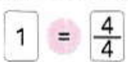
Amr's piece of blue stick candy is bigger than Lamia's piece of red stick candy.

$$\frac{1}{2} > \frac{1}{4}$$

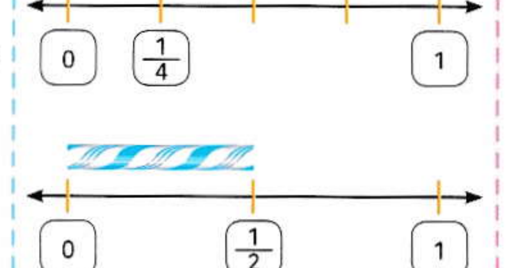
We notice that

The smaller fraction:

It is a whole that has been divided into more parts creating small pieces.



$\frac{1}{4}$ part is closer to 0 on the number line.



The bigger fraction:

It is a whole that has been divided into **less parts** creating **big** pieces.

$1 = \frac{2}{2}$

$\frac{1}{2}$ part is far away from 0 on the number line.

Connect:

- Ensure that your child can represent unit fractions using 4 models (picture model, set of object, bar model and number line).

Activity 1 Represent each fraction on the number line, then compare using (<, > or =):

Example

0 $\frac{1}{2}$ 1 0 $\frac{1}{3}$ $\frac{2}{3}$ 1

$\frac{1}{2}$ > $\frac{1}{3}$

a)

0 1 0 1

$\frac{1}{4}$ .... $\frac{1}{5}$

b)

0 1 0 1

$\frac{1}{5}$ .... $\frac{1}{2}$

c)

0 1 0 1

$\frac{1}{3}$ .... $\frac{1}{4}$

d)

0 1 0 1

$\frac{1}{8}$ .... $\frac{1}{12}$

e)

0 1 0 1

$\frac{1}{10}$ .... $\frac{1}{8}$

Parents' Tips:

- Encourage your child to compare between fractions using the number line.

Activity 2 Complete, then match:

Example

$\frac{1}{5}$ is bigger than

a)

$\frac{1}{3}$ is smaller than

b)

$\frac{1}{4}$ is equal to

c)

$\frac{1}{9}$ is bigger than

$\frac{1}{\dots}$

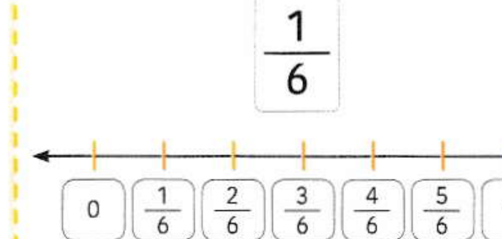
0 — 1

$\frac{1}{\dots}$

0 — 1

$\frac{1}{\dots}$

0 — 1



$\frac{1}{6}$

0, $\frac{1}{6}$, $\frac{2}{6}$, $\frac{3}{6}$, $\frac{4}{6}$, $\frac{5}{6}$, 1

Parents' Tips:

- Ensure that your child noticed that when he/she compares between fractions with a common numerator, the smaller denominator refers to the bigger fraction.

Activity 3 Color the right fraction:

Example

$\frac{1}{2}$ is smaller than

$\frac{1}{3}$ $\frac{2}{2}$ $\frac{1}{5}$

a) $\frac{1}{4}$ is bigger than

$\frac{1}{8}$ $\frac{1}{2}$ $\frac{1}{3}$

b) $\frac{3}{3}$ is equal to

$\frac{2}{3}$ $\frac{1}{3}$ 1

c) $\frac{1}{7}$ is smaller than

$\frac{1}{5}$ $\frac{1}{9}$ $\frac{1}{8}$

d) $\frac{1}{11}$ is bigger than

$\frac{1}{8}$ $\frac{1}{12}$ $\frac{1}{6}$

e) $\frac{5}{5}$ is equal to

1 $\frac{4}{5}$ $\frac{1}{5}$

I learned

- Locating unit fraction on the number line (0 to 1).
- Comparing unit fractions on the number line between 0 and 1.

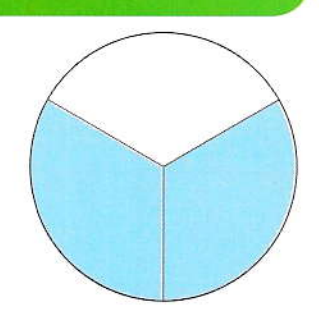
(A) Proper fractions

How can we represent fractions with a numerator greater than 1?

The numerator represents the number of shaded parts.

The denominator represents the total number of parts.

$\frac{2}{3}$

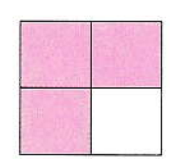


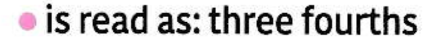
- is read as: Two thirds

$\frac{4}{6}$

- is read as: four sixths

$\frac{3}{4}$





- is read as: three fourths

WE NOTICE THAT:

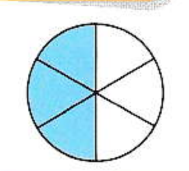
- $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{6}$ are called proper fractions.
- Proper fraction: is a fraction which has a numerator less than the denominator.
- Unit fraction is also a type of proper fractions.

Connect:

- Revise with your child how to read and collect data on the line plot.

Write the fraction that represents each shape, then read it:

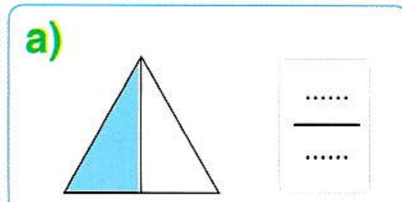
Example



$\frac{3}{6}$

is read as: three sixths

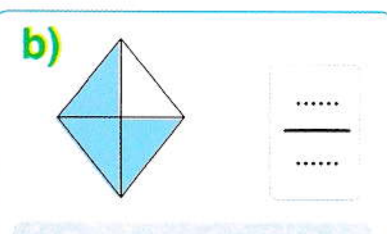
a)



$\frac{\dots\dots}{\dots\dots}$

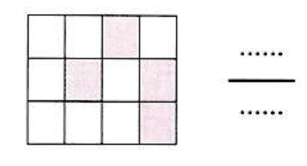
is read as: ....

b)



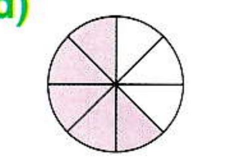
$\frac{\dots\dots}{\dots\dots}$

is read as: ....



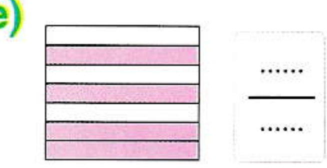
$\frac{\dots\dots}{\dots\dots}$

is read as: ....



$\frac{\dots\dots}{\dots\dots}$

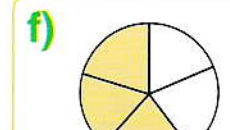
is read as: ....



$\frac{\dots\dots}{\dots\dots}$

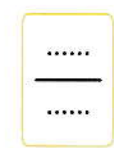
is read as: ....

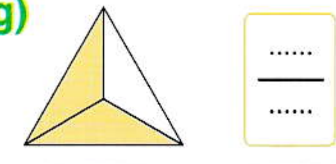
f)



$\frac{\dots\dots}{\dots\dots}$

is read as: ....

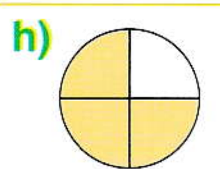




$\frac{\dots\dots}{\dots\dots}$

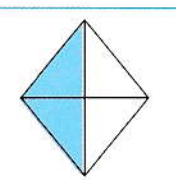
is read as: ....

h)



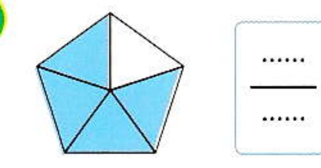
$\frac{\dots\dots}{\dots\dots}$

is read as: ....



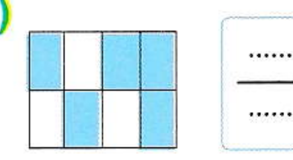
$\frac{\dots\dots}{\dots\dots}$

is read as: ....



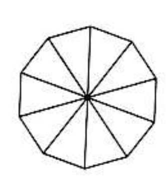
$\frac{\dots\dots}{\dots\dots}$

is read as: ....



$\frac{\dots\dots}{\dots\dots}$

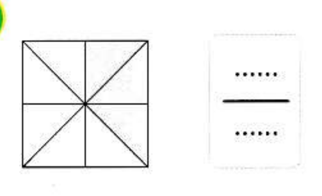
is read as: ....



$\frac{\dots\dots}{\dots\dots}$

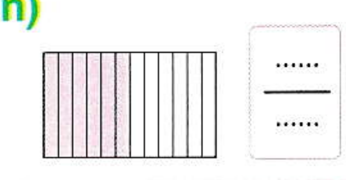
is read as: ....

m)



$\frac{\dots\dots}{\dots\dots}$

is read as: ....



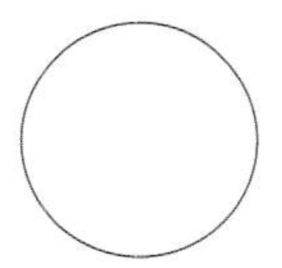
$\frac{\dots\dots}{\dots\dots}$

is read as: ....

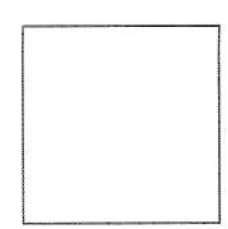
Parents' Tips:

- Help your child to form proper fractions that have a numerator greater than one.

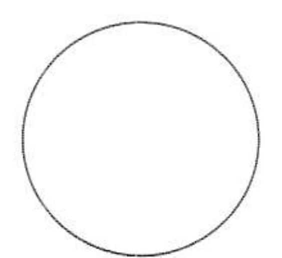
Draw lines and shade to represent the following fractions:



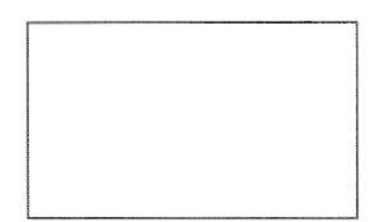
$\frac{1}{2}$



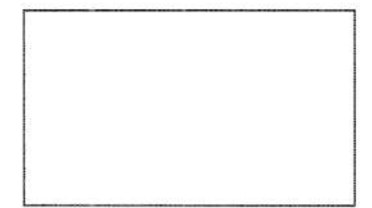
$\frac{4}{5}$



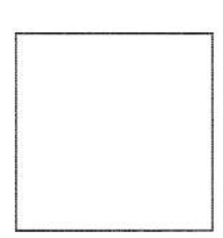
$\frac{5}{6}$



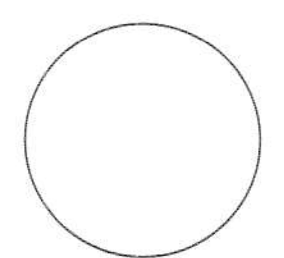
$\frac{2}{7}$



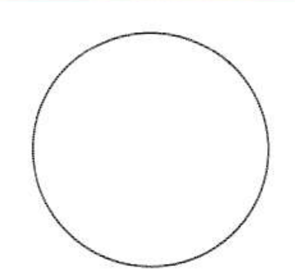
$\frac{2}{5}$



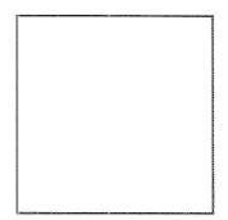
$\frac{2}{4}$



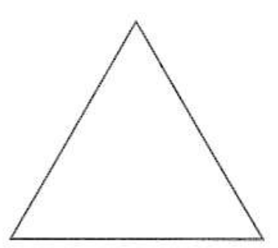
$\frac{3}{4}$



$\frac{2}{8}$



$\frac{1}{3}$



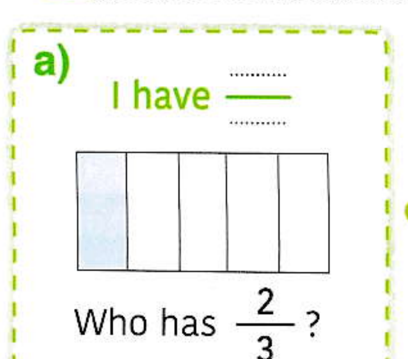
$\frac{1}{2}$

Parents' Tips:

- Ensure that your child can represent the numerator as the shaded part and the denominator as the number of all parts.

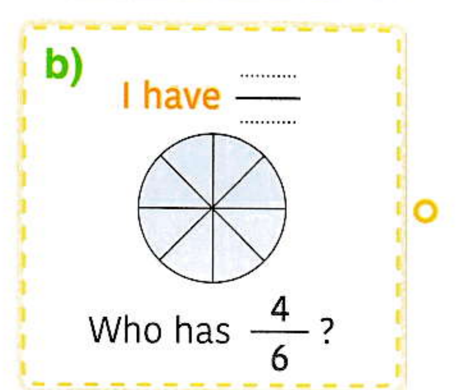
Activity 3 Complete, then match:

a) I have $\frac{\dots}{\dots}$



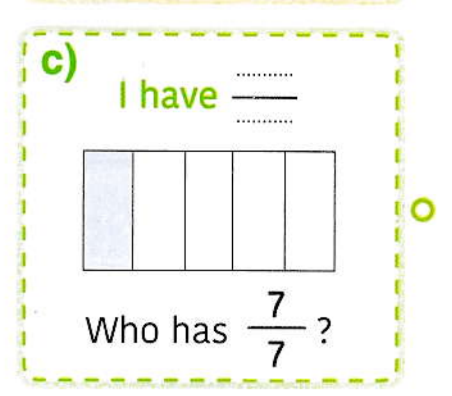
Who has $\frac{2}{3}$?

b) I have $\frac{\dots}{\dots}$



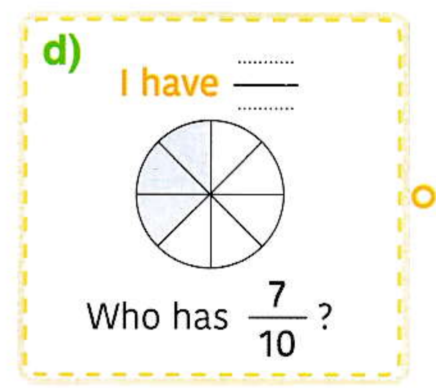
Who has $\frac{4}{6}$?

c) I have $\frac{\dots}{\dots}$



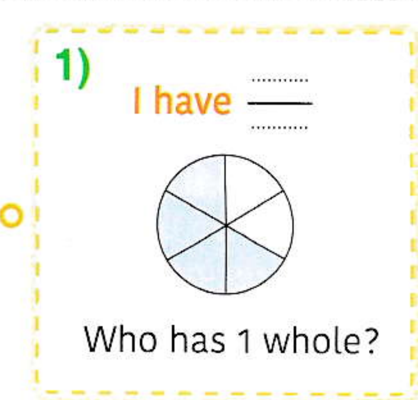
Who has $\frac{7}{7}$?

d) I have $\frac{\dots}{\dots}$



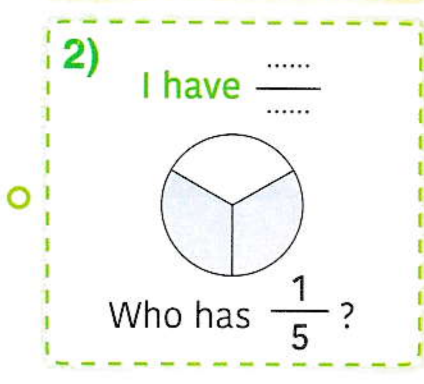
Who has $\frac{7}{10}$?

1) I have $\frac{\dots}{\dots}$



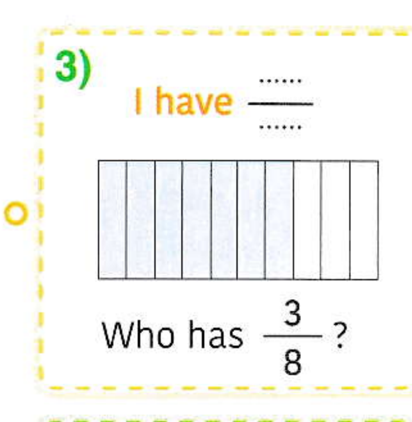
Who has 1 whole?

2) I have $\frac{\dots}{\dots}$



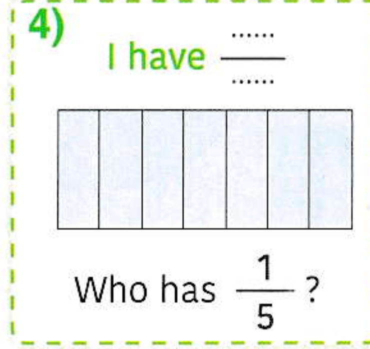
Who has $\frac{1}{5}$?

3) I have $\frac{\dots}{\dots}$



Who has $\frac{3}{8}$?

4) I have $\frac{\dots}{\dots}$



Who has $\frac{1}{5}$?

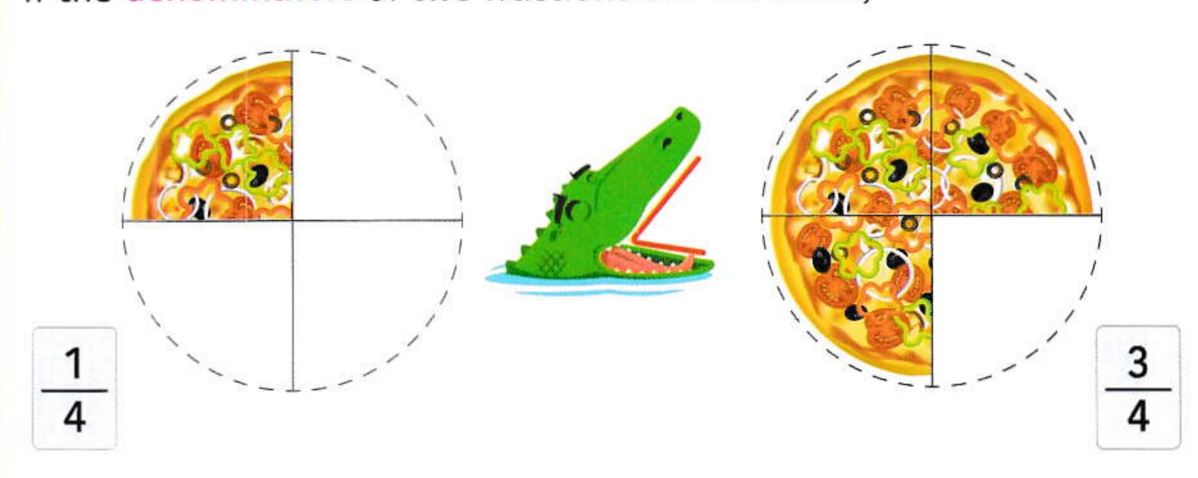
Parents' Tips:

- Ensure that your child notices the picture model and its proper fraction.

(B) Comparing proper fractions

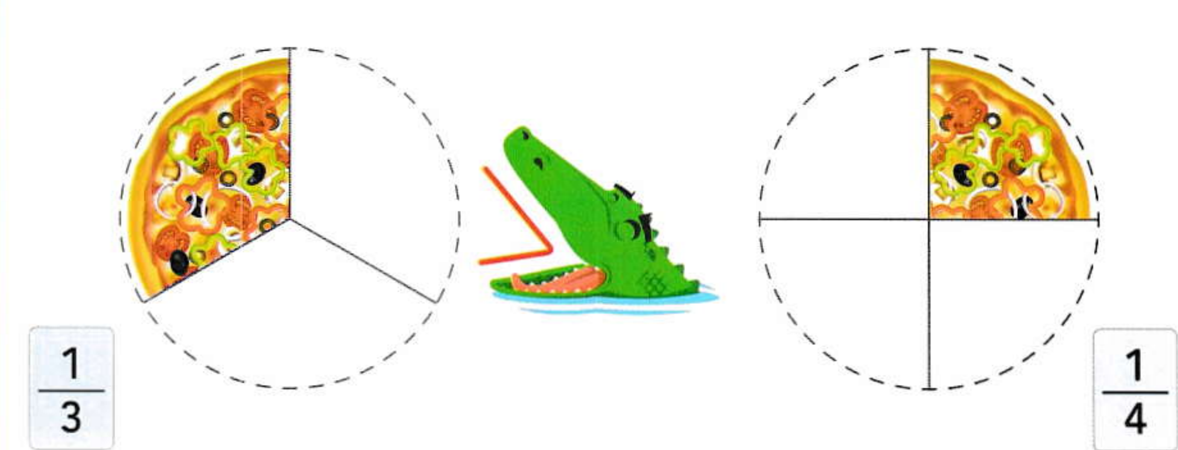
How can we use the relation between numerator and denominator to help us in comparing proper fractions?

If the denominators of two fractions are the same,



the crocodile eats the greater numerator ($3 > 1$).

If the numerators of two fractions are the same,

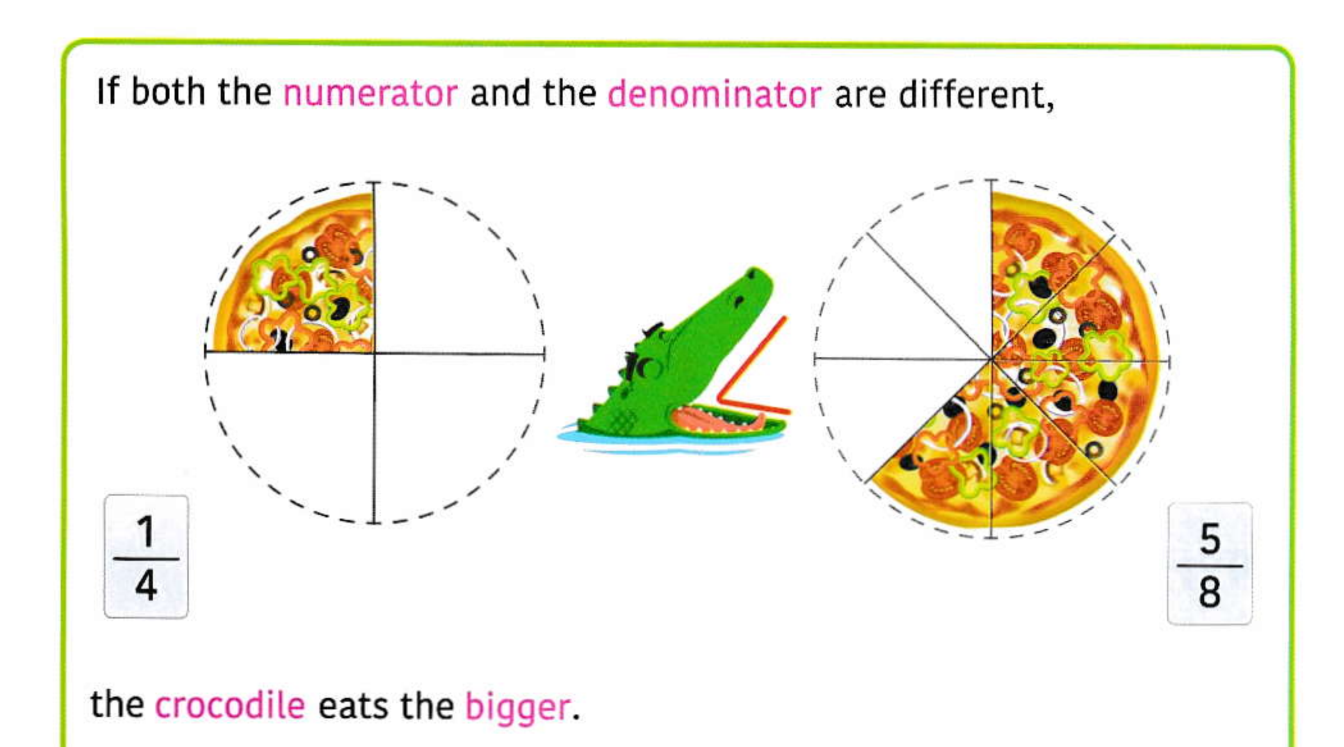


the crocodile eats the smaller denominator ($\frac{1}{3} > \frac{1}{4}$).

Parents' Tips:

- Ensure that your child knows how to compare between fractions using the signs (< , > or =).

If both the numerator and the denominator are different,



$\frac{1}{4}$ $\frac{5}{8}$

the crocodile eats the bigger.

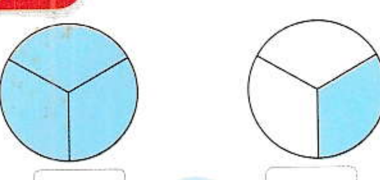
If the numerator and the denominator of one of the two fractions are the same,

$\frac{2}{3}$ $\frac{2}{2}$

the crocodile eats the fraction that represents 1 whole.

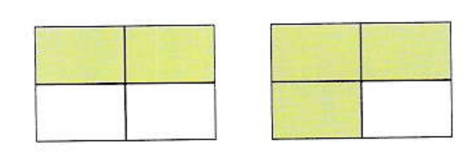
Compare using (< , > or =):

Example



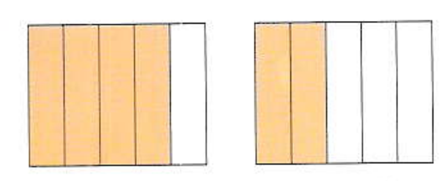
$\frac{3}{3}$ > $\frac{1}{3}$

a)



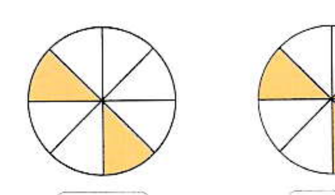
$\frac{2}{4}$ .... $\frac{3}{4}$

b)



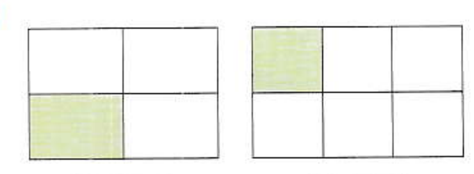
$\frac{4}{5}$ .... $\frac{2}{5}$

c)



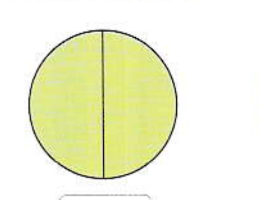
$\frac{2}{8}$ .... $\frac{3}{8}$

d)



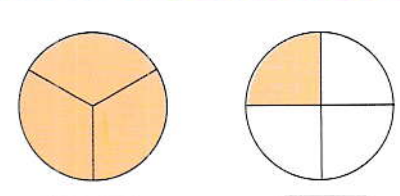
$\frac{1}{4}$ .... $\frac{1}{6}$

e)



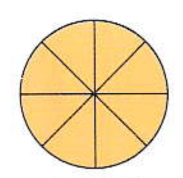
$\frac{2}{2}$ .... $\frac{1}{2}$

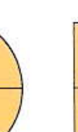
f)



$\frac{3}{3}$ .... $\frac{1}{4}$

g)



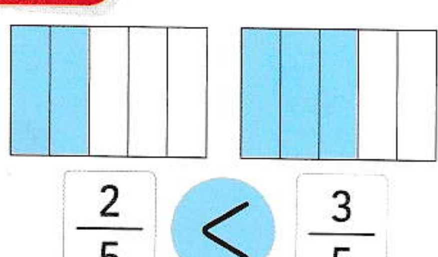


$\frac{8}{8}$ .... $\frac{6}{6}$

Parents' Tips:

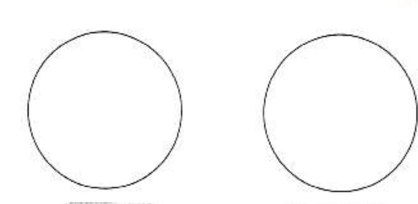
- Let your child compare fractions using one of the following models (bar model, number line or picture model).

Represent the given fractions, then compare using (< , > or =):



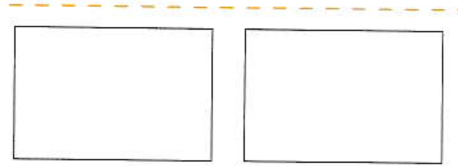
$\frac{2}{5} < \frac{3}{5}$

a)



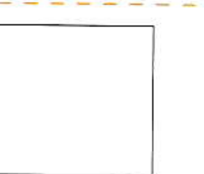
$\frac{1}{4}$ .... $\frac{2}{4}$

b)



$\frac{4}{6}$ .... $\frac{6}{6}$

c)

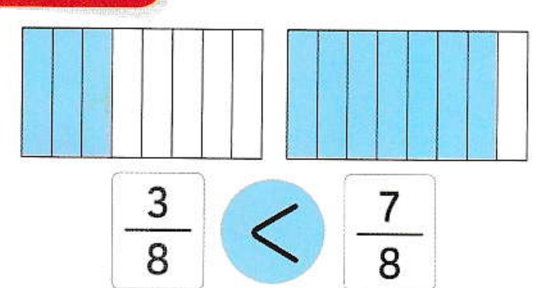


$\frac{1}{2}$ .... $\frac{1}{3}$

Activity 6

Draw the bar model to compare between the given fractions using (< , > or =):

Example



$\frac{3}{8} < \frac{7}{8}$

a)

$\frac{3}{3}$ .... $\frac{2}{3}$

b)

$\frac{1}{4}$ .... $\frac{3}{4}$

c)

$\frac{2}{6}$ .... $\frac{4}{6}$

Match:

a) $\frac{6}{8}$ is bigger than	$\frac{1}{3}$
b) $\frac{4}{6}$ is smaller than	$\frac{7}{9}$
c) $\frac{3}{3}$ is bigger than	$\frac{4}{8}$
d) $\frac{5}{9}$ is smaller than	$\frac{6}{6}$

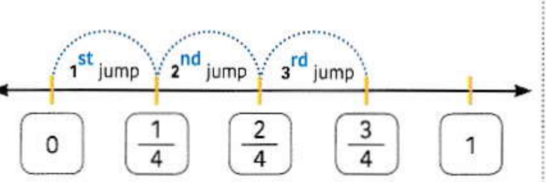
I learned

- Modeling fractions with numerator greater than 1.
- Identifying proper fractions.
- Comparing proper fractions.

Locating proper fractions on the number line

How can we locate $\frac{3}{4}$ on the number line?

- **First:** Divide the number line into 4 equal parts as our denominator is 4.



- **Second:** Move 3 jumps starting from 0 as our numerator is 3.

Remember

- The marks on the number line show parts that are equal.
- The marks on the number line tell us (How many jumps did we make?)

1 jump makes $\frac{1}{4}$ | 2 jumps make $\frac{2}{4}$ | 3 jumps make $\frac{3}{4}$

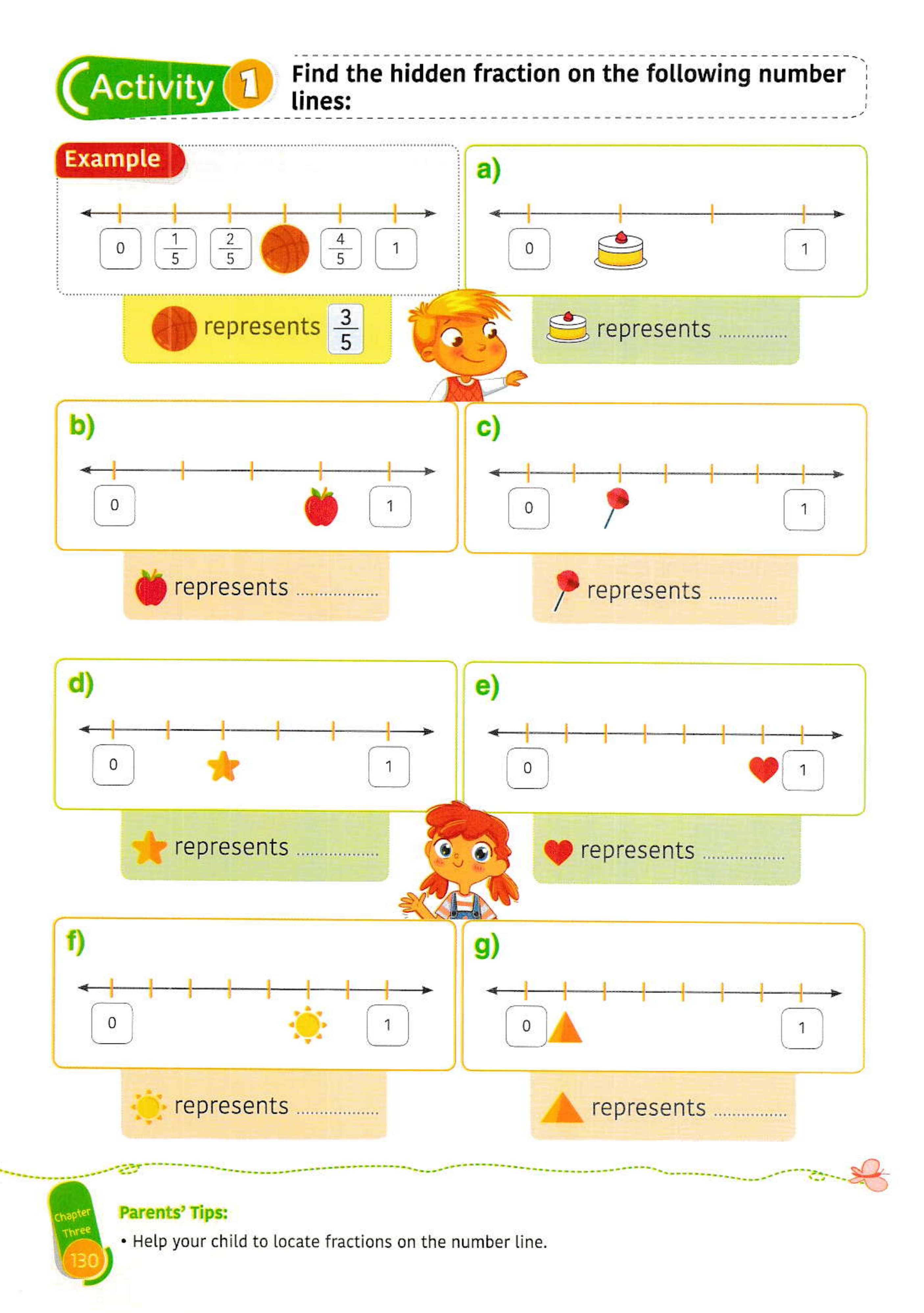
Till we reach the 1 whole which represents $\frac{4}{4}$

Connect:

- Revise with your child the forms that can be used to represent numbers up to 6 digits.

Activity 1

Find the hidden fraction on the following number lines:



Parents' Tips:

- Help your child to locate fractions on the number line.

Divide each line (from 0 to 1) to represent the following fractions:

Example

0 — $\frac{3}{4}$ — 1

$\frac{3}{4}$

a) 0 — 1

$\frac{2}{5}$

b) 0 — 1

$\frac{5}{6}$

c) 0 — 1

$\frac{3}{3}$

d) 0 — 1

$\frac{4}{7}$

e) 0 — 1

$\frac{2}{8}$

f) 0 — 1

$\frac{1}{4}$

g) 0 — 1

$\frac{4}{5}$

Parents' Tips:

- Ensure that your child can divide the number line into suitable equal parts to represent each fraction.

Match, then locate each fraction in its place on the number line:

a) 0 ———— 1 ○ ○ $\frac{2}{3}$

b) 0 ———— 1 ○ ○ $\frac{1}{5}$

c) 0 ———— 1 ○ ○ $\frac{4}{6}$

d) 0 ———— 1 ○ ○ $\frac{3}{4}$

- Locating proper fractions on the number line.
- Dividing a number line into a given number of equal parts.

(A) Proper fractions of a set

How can we represent a proper fraction of a set?

There was a group of children playing at the playground, look to find the following fractions:

The fraction of the set of girls is:

$$\frac{\text{Number of girls}}{\text{Total number of children}} = \frac{5}{8}$$

read as: five eighths

The fraction of the set of boys is:

$$\frac{\text{Number of boys}}{\text{Total number of children}} = \frac{3}{8}$$

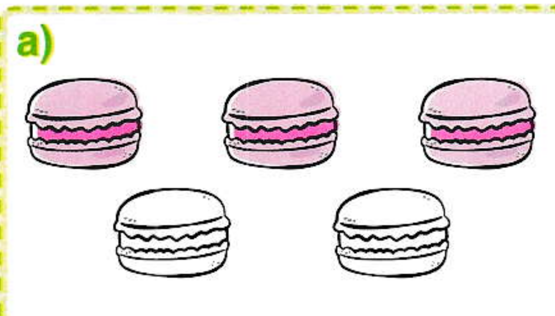
read as: three eighths

Connect:

- Revise with your child how to represent fractions on the picture model and how can be divided the shapes equally in different ways.

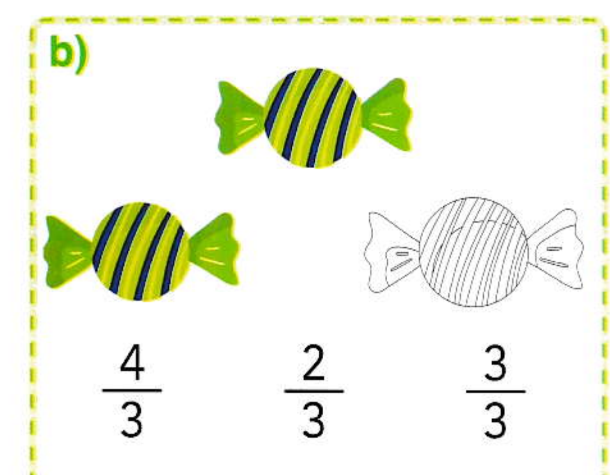
Circle the fraction which represents the number of colored objects in each set:

a)



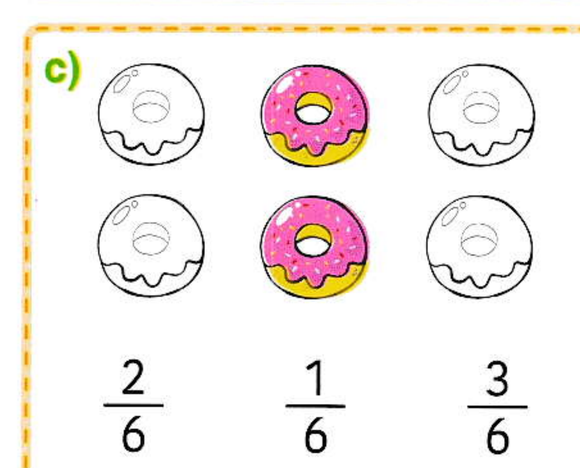
$\frac{2}{5}$ $\frac{1}{5}$ $\frac{3}{5}$

b)



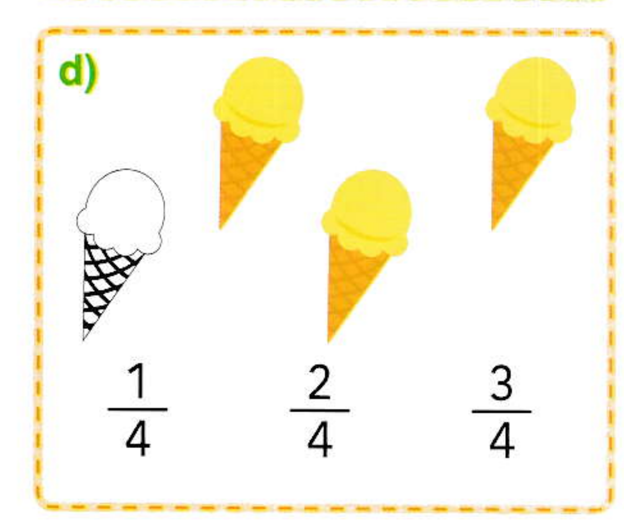
$\frac{4}{3}$ $\frac{2}{3}$ $\frac{3}{3}$

c)



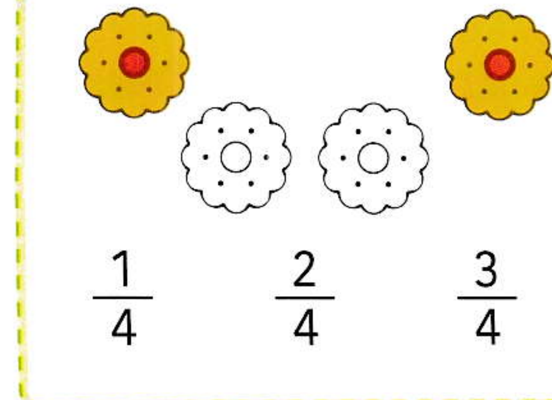
$\frac{2}{6}$ $\frac{1}{6}$ $\frac{3}{6}$

d)



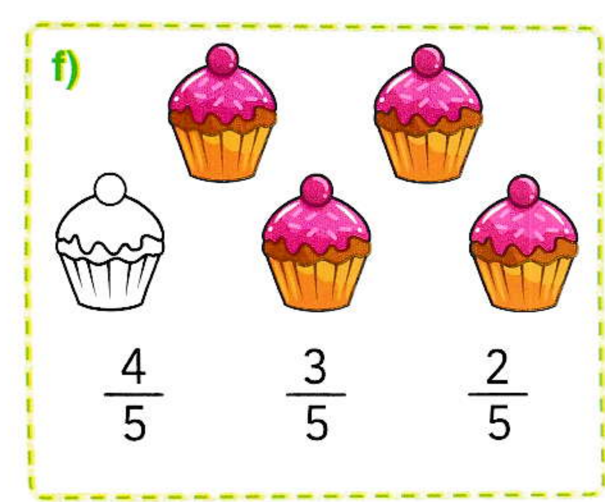
$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$

e)



$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$

f)



$\frac{4}{5}$ $\frac{3}{5}$ $\frac{2}{5}$

Parents' Tips:

- Practice with your child how to represent a proper fraction of a set of objects.

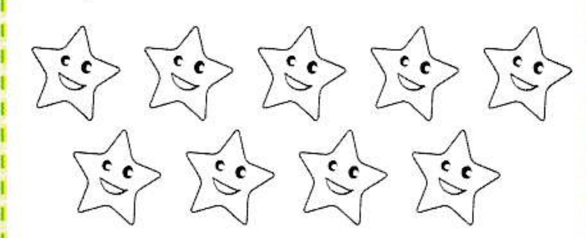
Color as required:

Example

- $\frac{2}{5}$ of the cupcakes in brown.
- $\frac{3}{5}$ of the cupcakes in pink.

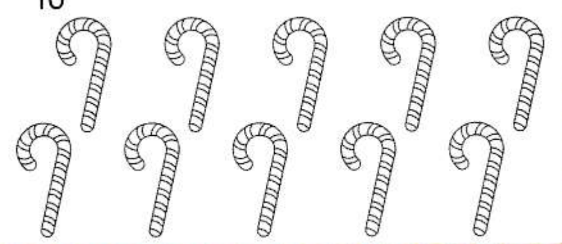
a)

- $\frac{4}{9}$ of the stars in yellow.
- $\frac{5}{9}$ of the stars in blue.



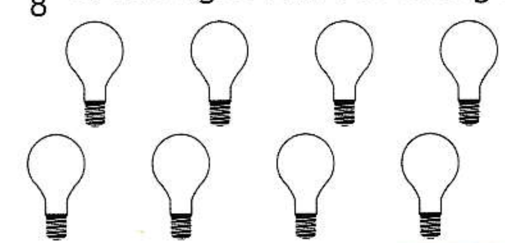
b)

- $\frac{1}{10}$ of the stick candies in red.
- $\frac{9}{10}$ of the stick candies in green.



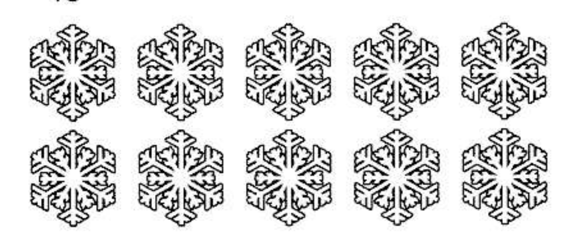
c)

- $\frac{2}{8}$ of the light bulbs in blue.
- $\frac{4}{8}$ of the light bulbs in orange.



d)

- $\frac{4}{10}$ of the snowflakes in purple.
- $\frac{6}{10}$ of the snowflakes in green.



e)

- $\frac{6}{6}$ of the gifts in yellow.

Activity 3 Read, then solve:

a)

In a hot day some children wanted some drinks. Three children wanted orange juice, and one child wanted lemon juice. What is the fraction that represents the child who wanted lemon juice?

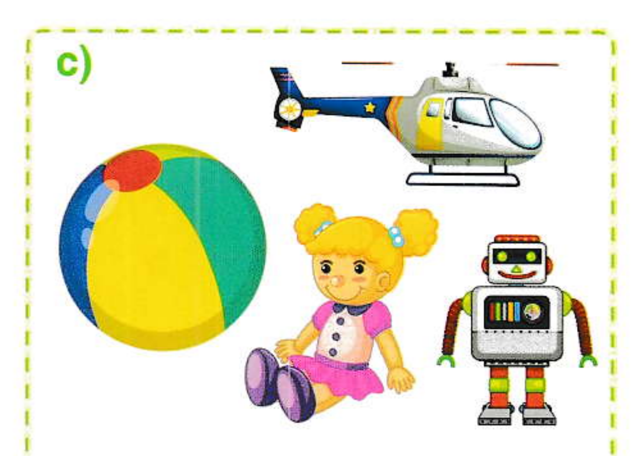
$\frac{\dots\dots}{\dots\dots}$

b)

The teacher asked the students to bring 10 pens, Amr brought 1, Kenzy brought 2 and Ahmed brought 3. What is the fraction which represents the pens that should be brought?

$\frac{\dots\dots}{\dots\dots}$

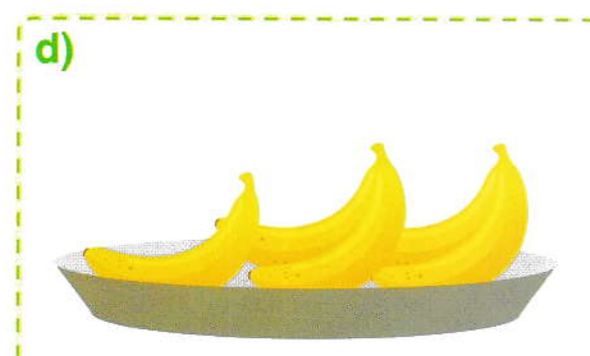
c)



Sara has four toys. She gave her sister 1/4 of them. What is the fraction of the left toys?

$\frac{\dots\dots}{\dots\dots}$

d)



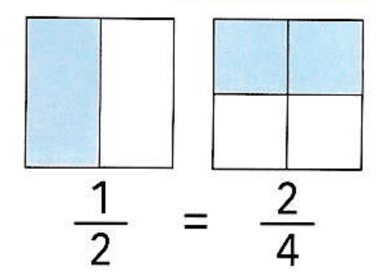
If there are 5 bananas on a plate. Ali ate 3 of them. What is the fraction of the left bananas?

$\frac{\dots\dots}{\dots\dots}$

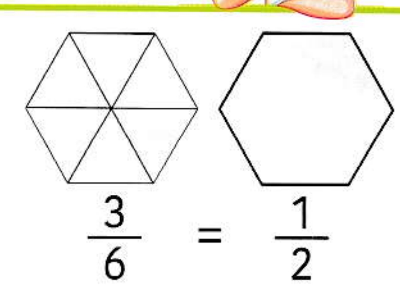
Parents' Tips:

- Let your child read carefully to figure out the total number of set that will be denominator of the required fraction in each problem.

Can we make equal fractions when we have different shapes but with the same area?



$\frac{1}{2} = \frac{2}{4}$



$\frac{3}{6} = \frac{1}{2}$

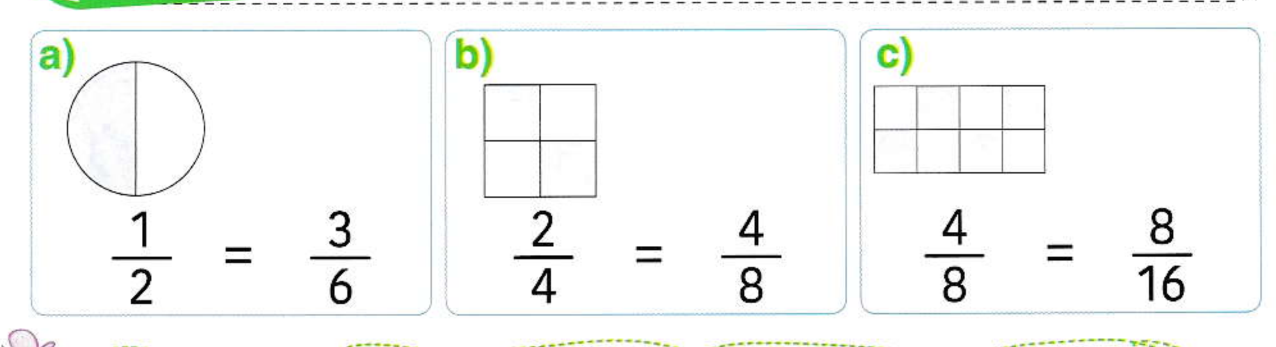
We can have equal fractions even if we have different shapes because they are the same size in relation to the whole.

Activity 4 Complete, then match the equal fractions:

a) $\frac{\dots}{\dots}$

b) $\frac{\dots}{\dots}$

c) $\frac{\dots}{\dots}$



Activity 5 Draw a different picture model to show equal fractions:

a) $\frac{1}{2} = \frac{3}{6}$

b) $\frac{2}{4} = \frac{4}{8}$

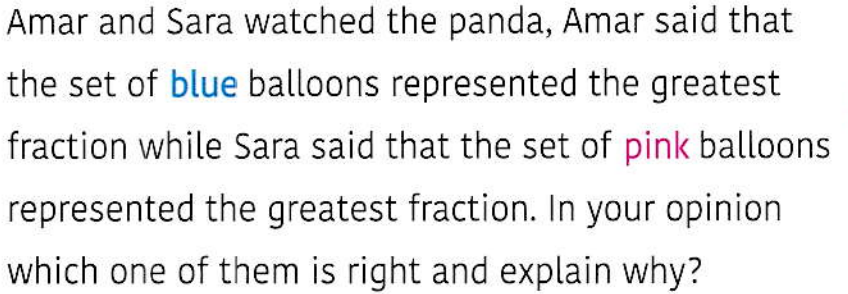
c) $\frac{4}{8} = \frac{8}{16}$

Parents' Tips:

- Encourage your child to determine the equal fractions using different models.

(B) Using hypothesis for comparing fractions

How can we make a hypothesis about comparing two fractions?

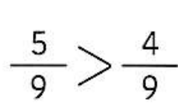


Amar and Sara watched the panda, Amar said that the set of blue balloons represented the greatest fraction while Sara said that the set of pink balloons represented the greatest fraction. In your opinion which one of them is right and explain why?

Sara said that:

$$\frac{4}{9} > \frac{5}{9}$$

This disagrees with Sara.



Amar said that:

$$\frac{5}{9} > \frac{4}{9}$$

This agrees with Amar.

For my hypothesis in comparing fractions of the same denominators, I compare only between their numerators.

Note

- **Hypothesis:** is an educated guess used to explain the reason for choosing a certain answer.

Parents' Tips:

- Let your child develop and test his/her hypothesis for comparing fractions.

Read, then solve:

a) Test your hypothesis: Which fraction is the smaller $\frac{2}{7}$ or $\frac{5}{7}$?
Use a model to prove your answer, and write a comparison statement using (< or >):

....

....

....

....

b) What is your hypothesis in comparing between $\frac{3}{5}$ and $\frac{3}{8}$, use the number line to prove your answer, then write a comparison statement using (< or >):

....

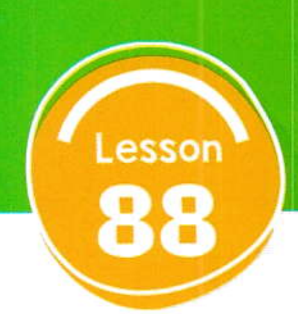
....

....

....

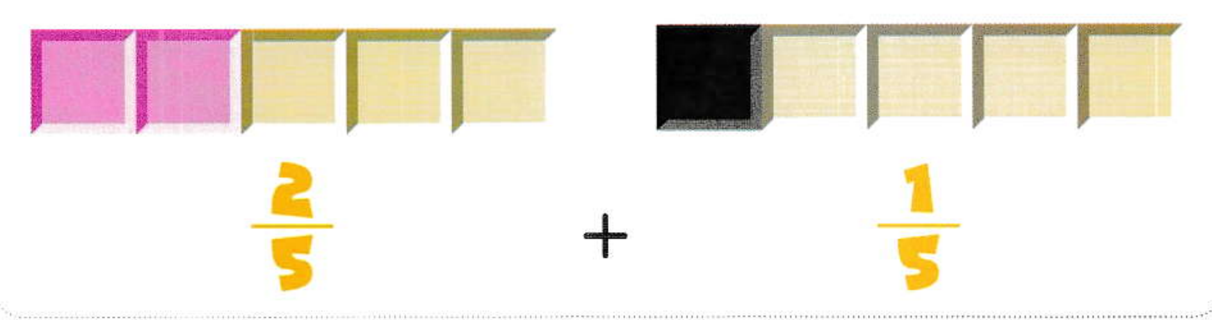
I learned

- Representing proper fractions of a set.
- Reading and writing proper fractions.
- Explaining how to compare fractions.



Adding fractions with the same denominators

How can we add fractions with the same denominators?



Step (1): Add the numerators (2 + 1 = 3)

Step (2): Keep the denominators the same (as they are):

The total sum = $\frac{3}{5}$

Because the size of chocolate pieces (denominator) doesn't change.

only the number of chocolate pieces (numerators) will change.

Note

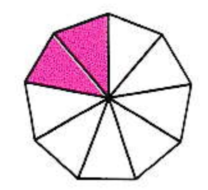
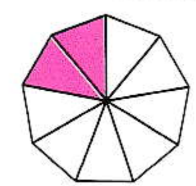
- The two fractions which have the same denominators are called fractions with **common denominators.**

Connect:

- Revise with your child how to order numbers up to 6 digits.

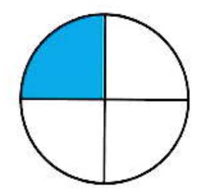
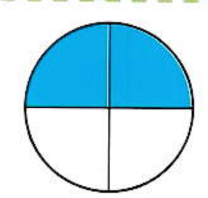
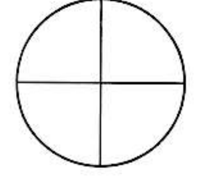
Color the model fraction to answer the addition problems, then complete:

a)

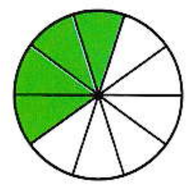
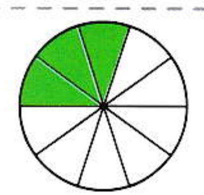
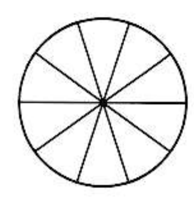
$\frac{2}{9} + \frac{2}{9} = \frac{\dots\dots}{\dots\dots}$

b)

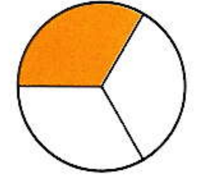
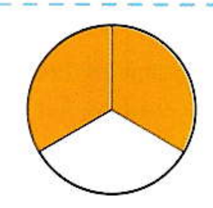
$\frac{1}{4} + \frac{2}{4} = \frac{\dots\dots}{\dots\dots}$

c)

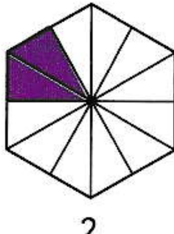
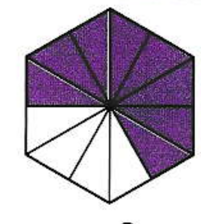
$\frac{4}{10} + \frac{3}{10} = \frac{\dots\dots}{\dots\dots}$

d)

$\frac{1}{3} + \frac{2}{3} = \frac{\dots\dots}{\dots\dots}$

e)

$\frac{2}{12} + \frac{8}{12} = \frac{\dots\dots}{\dots\dots}$

Parents' Tips:

- Help your child to learn how to add fractions using coloring.

Activity 2

Solve each problem, then color according to the given keys:

a)

$\frac{2}{10} + \frac{5}{10} = \square$

Color the answer in blue.

b)

$\frac{1}{9} + \frac{6}{9} = \square$

Color the answer in green.

c)

$\frac{4}{8} + \frac{3}{8} = \square$

Color the answer in yellow.

d)

$\frac{2}{6} + \frac{3}{6} = \square$

Color the answer in red.

e)

$\frac{1}{3} + \frac{1}{3} = \square$

Color the answer in purple.

f)

$\frac{2}{5} + \frac{1}{5} = \square$

Color the answer in orange.

g)

$\frac{4}{7} + \frac{2}{7} = \square$

Color the answer in blue.

h)

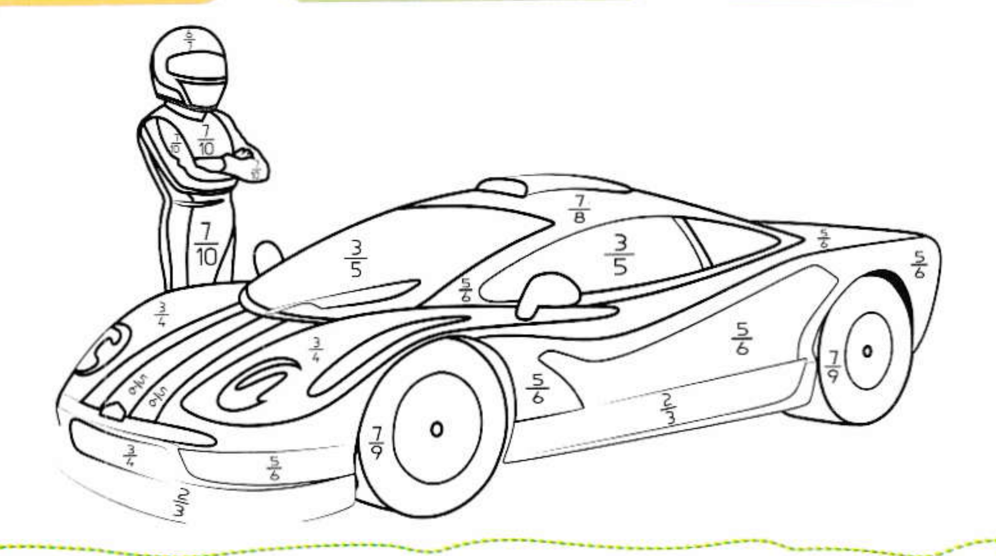
$\frac{1}{2} + \frac{1}{2} = \square$

Color the answer in black.

i)

$\frac{2}{4} + \frac{1}{4} = \square$

Color the answer in orange.

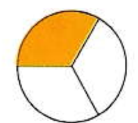
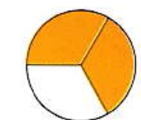
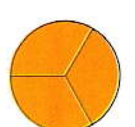


Parents' Tips:

- Ensure that your child understands that when he/she adds fractions the denominator remains the same.

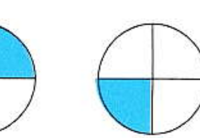
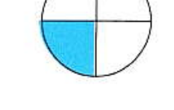
Activity 3 Write and add the fractions, then color the result:

Example

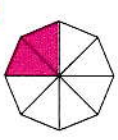
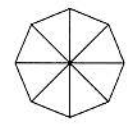
$\frac{1}{3} + \frac{2}{3} = \frac{3}{3} = 1$

a)

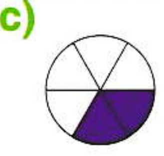
$\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$

b)

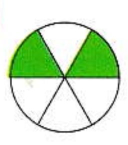
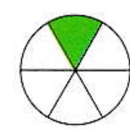
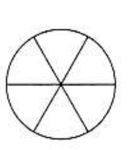
$\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$

c)



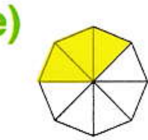
$\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$

d)

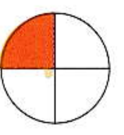
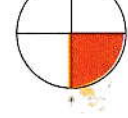
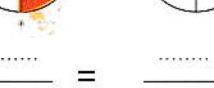
$\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$

e)



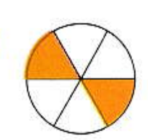
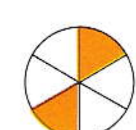
$\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$

f)

$\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$

g)

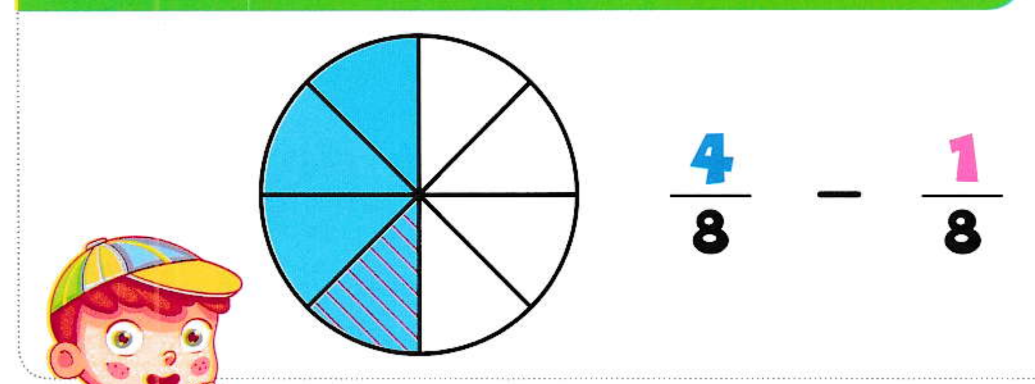
$\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$

I learned

- Adding two fractions with the same denominator.
- Explaining the importance of common denominators when adding fractions.

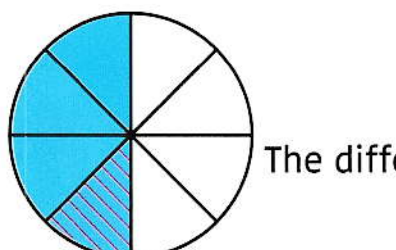
Subtracting fractions

How can we subtract fractions with the same denominators?



Step (1): Subtract the numerators (4 - 1) = 3

Step (2): Keep the denominators the same as they are.



The difference = $\frac{4}{8} - \frac{1}{8} = \frac{3}{8}$

Cross out 1 part of the 4 colored parts.

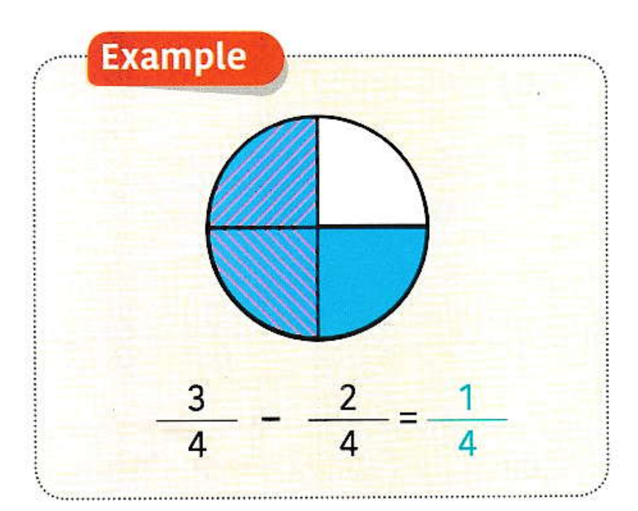
So, the numerator will change **but** the denominator remains the same.

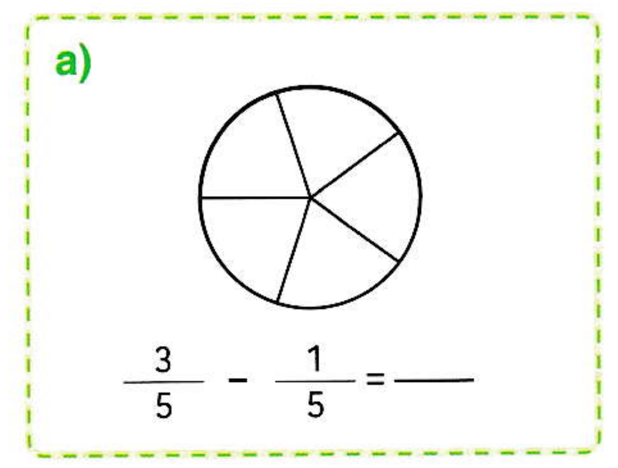
Connect:

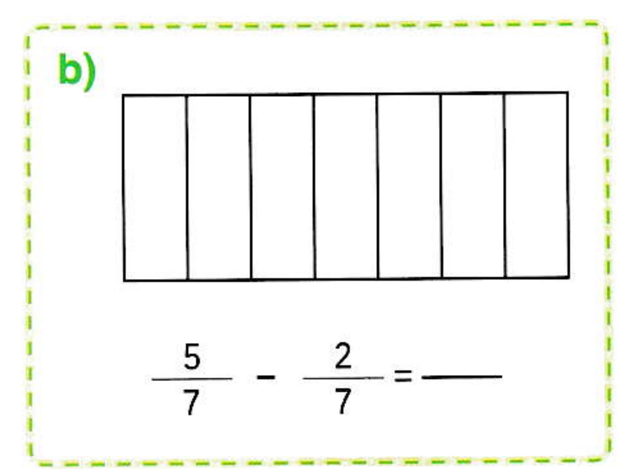
- Revise with your child how to find the common mistakes made in adding fractions.

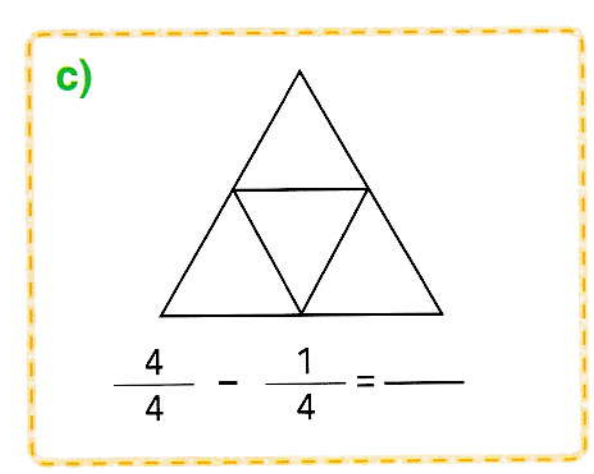
Activity 1

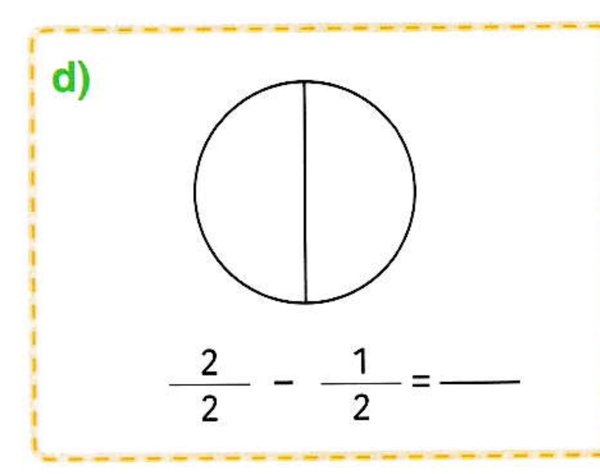
Color the model fraction to answer the subtraction problems:

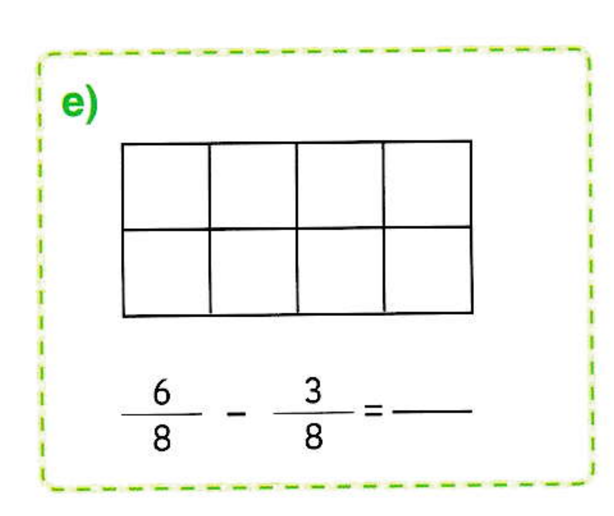












Parents' Tips:

- Ensure that your child notices that the denominator remains as the same.

Subtract the following fractions, then color the correct answer:

Example

$\frac{5}{8} - \frac{3}{8} = \frac{\dots}{\dots}$

$\frac{8}{8}$ $\frac{2}{8}$ $\frac{1}{8}$

a)

$\frac{6}{6} - \frac{4}{6} = \frac{\dots}{\dots}$

$\frac{4}{4}$ $\frac{10}{6}$ $\frac{2}{6}$

b)

$\frac{8}{9} - \frac{5}{9} = \frac{\dots}{\dots}$

$\frac{3}{9}$ $\frac{2}{9}$ $\frac{13}{9}$

c)

$\frac{7}{10} - \frac{2}{10} = \frac{\dots}{\dots}$

$\frac{6}{10}$ $\frac{5}{10}$ $\frac{10}{10}$

d)

$\frac{2}{3} - \frac{1}{3} = \frac{\dots}{\dots}$

$\frac{3}{3}$ $\frac{1}{2}$ $\frac{1}{3}$

e)

$\frac{5}{10} - \frac{2}{10} = \frac{\dots}{\dots}$

$\frac{4}{10}$ $\frac{1}{10}$ $\frac{3}{10}$

f)

$\frac{5}{9} - \frac{4}{9} = \frac{\dots}{\dots}$

$\frac{1}{9}$ $\frac{1}{10}$ $\frac{9}{9}$

g)

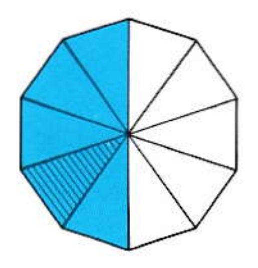
$\frac{8}{8} - \frac{3}{8} = \frac{\dots}{\dots}$

$\frac{5}{8}$ $\frac{11}{8}$ $\frac{1}{8}$

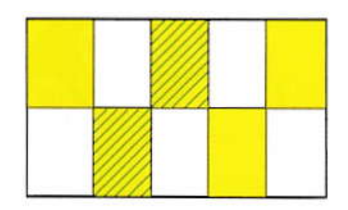
Parents' Tips:

- Ensure that your child knows how to subtract fractions.

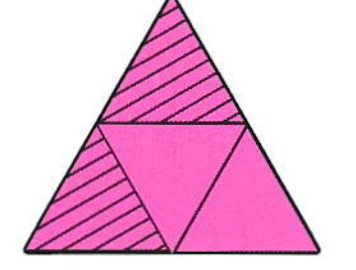
Solve, then match each problem with its suitable model:

a) 

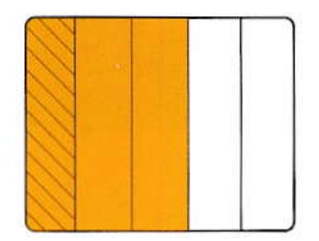
$$\frac{3}{5} - \frac{1}{5} = \frac{\dots\dots}{\dots\dots}$$

b) 

$$\frac{4}{4} - \frac{2}{4} = \frac{\dots\dots}{\dots\dots}$$

c) 

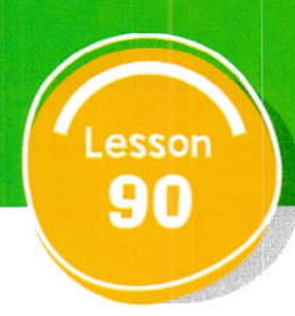
$$\frac{5}{10} - \frac{1}{10} = \frac{\dots\dots}{\dots\dots}$$

d) 

$$\frac{5}{10} - \frac{2}{10} = \frac{\dots\dots}{\dots\dots}$$

I learned

- Subtracting fractions with the same denominator.
- Explaining how to subtract fractions with common denominators.

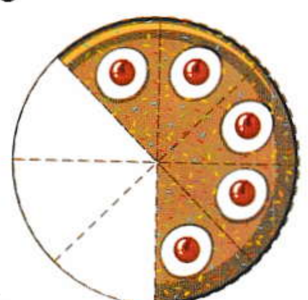


Fraction story problems

How can we solve subtraction and addition story problems?

Rana baked a cake and cut it into eighths. She ate $\frac{3}{8}$ of the cake.

How much of the cake is left?



The word **left** means **subtract**.

The parts left with her = $\frac{8}{8} - \frac{3}{8} = \frac{5}{8}$

Remember:
- Subtract the numerator (8 - 3) = 5
- Keep the denominators as the same.

Yasser walked $\frac{2}{5}$ of a mile yesterday and $\frac{2}{5}$ of a mile today.

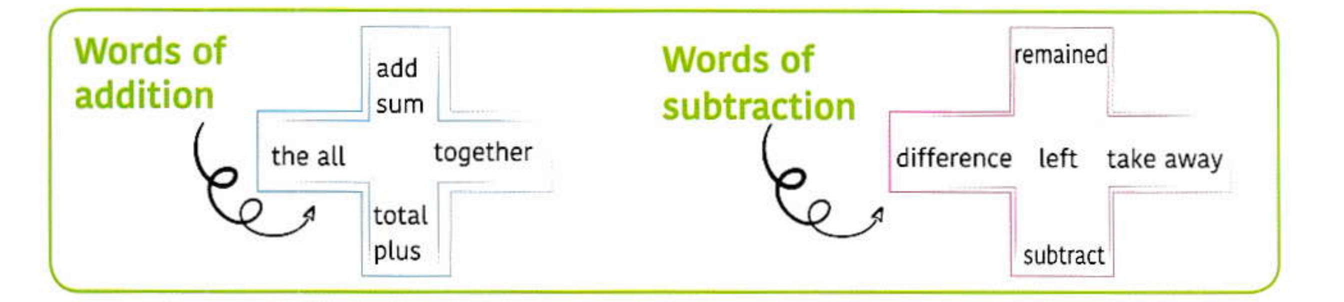
How many miles did Yasser walk in all?

The word **in all** means **addition**.

The total number of miles =

$\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$

Remember:
- Add the numerator (2 + 2 = 4).
- Keep the denominators as the same.



Connect:
- Revise with your child how to divide and the relation between division and multiplication using fact family.

Activity 1 Read, then solve:

a)

Rasha had $\frac{6}{8}$ of a packet of cookies, after she ate some cookies, $\frac{2}{8}$ of the packet remained. **What fraction of the packet of cookies did Rasha eat?**

- The word .... means ....
- The fraction of cookies that she ate

= ....

b)

Omar had a can of juice in his house which is completely full. He drank $\frac{1}{7}$ of the juice on the first day, then he drank $\frac{5}{7}$ of the juice during the second day. **What is the fraction that shows the total amount of juice he drank?**

- The word .... means ....
- The fraction of juice which he drank

= ....

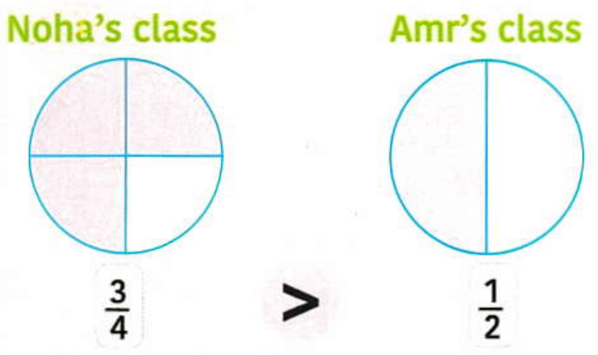
Parents' Tips:

- Let your child mention to you the words that would help him/her to solve the above problems.

Read, then find the result:

Example

Noha and Amr baked 2 cakes that were in the same size. Noha gave $\frac{3}{4}$ of her cake to her class. Amr gave $\frac{1}{2}$ of his cake to his class, **which class received more cakes, Noha's class or Amr's class?**



$\frac{3}{4}$ > $\frac{1}{2}$

Noha's class has received more cake than Amr's class.

Ramy and Ahmed are two brothers. They were painting their bedrooms. Ramy has painted $\frac{2}{5}$ of his room, Ahmed has painted $\frac{2}{3}$ of his room, **who has painted the most of his bedroom?**

Ramy's bedroom .... **Ahmed's bedroom**

$\frac{2}{5}$ $\frac{2}{6}$

.... bedroom was painted more than .... bedroom.

Parents' Tips:

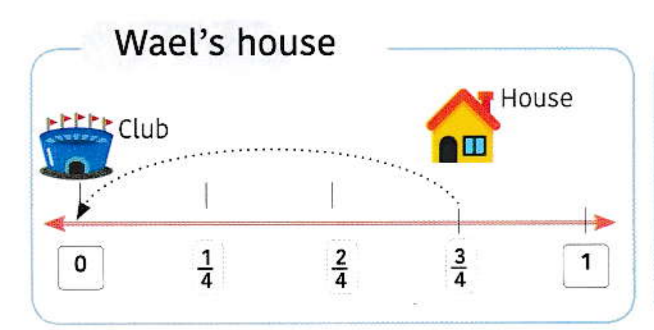
- Let your child explain his/her answer using (picture model, bar model or number line).

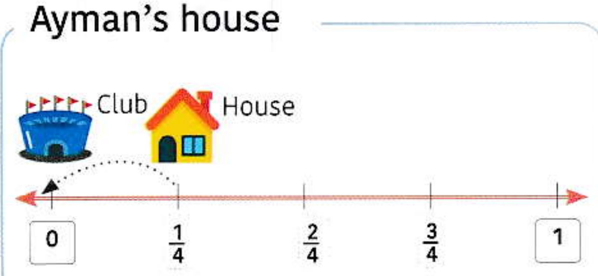
Read, then solve:

Wael's house is $\frac{3}{4}$ of a kilometer from the club.

Ayman's house is $\frac{1}{4}$ of a kilometer from the same club.

Which house is closer to the club?



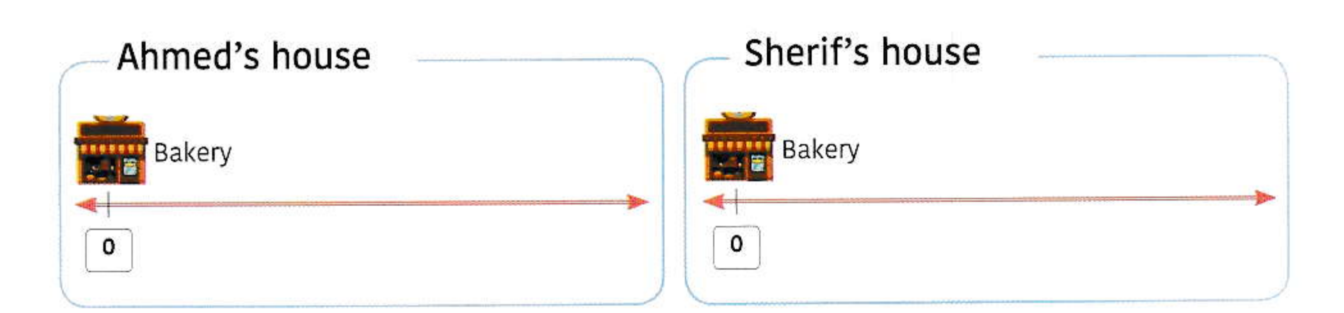


We found that Ayman's house is closer to the club than Wael's house.

Ahmed's house is $\frac{2}{5}$ of a kilometer from the bakery,

while Sherif's house is $\frac{3}{5}$ of a kilometer from the same bakery.

Which house is closer to the bakery?



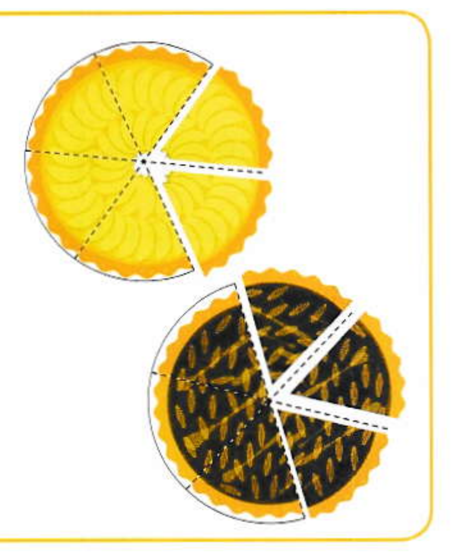
.... **house is closer to the bakery than** .... **house.**

Parents' Tips:

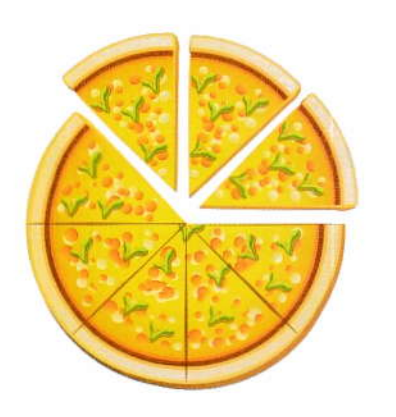
- Help your child to form his own story problems.

Try to write your own fraction story problem using the given figures:

a) **Addition story problem:**



b) **Subtraction story problem:**



I learned

- Understanding fractions to solve real-world problems.
- Writing a real-world story problems involving fractions.

General Activities on Chapter 3

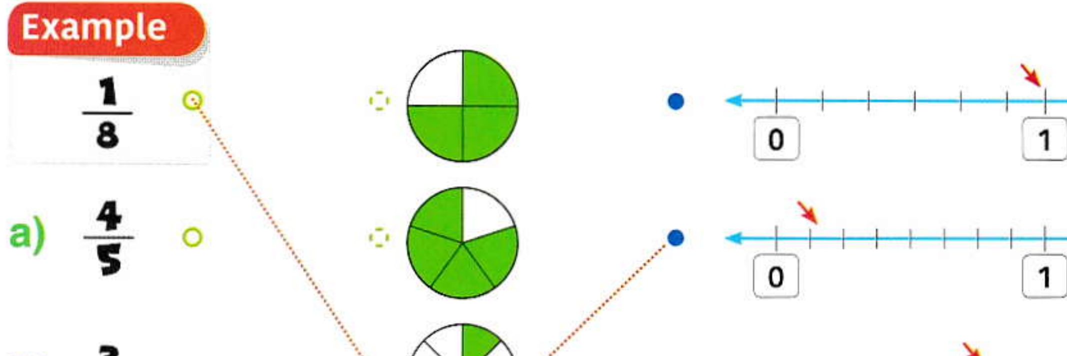
1 Match:

Example $\frac{1}{8}$

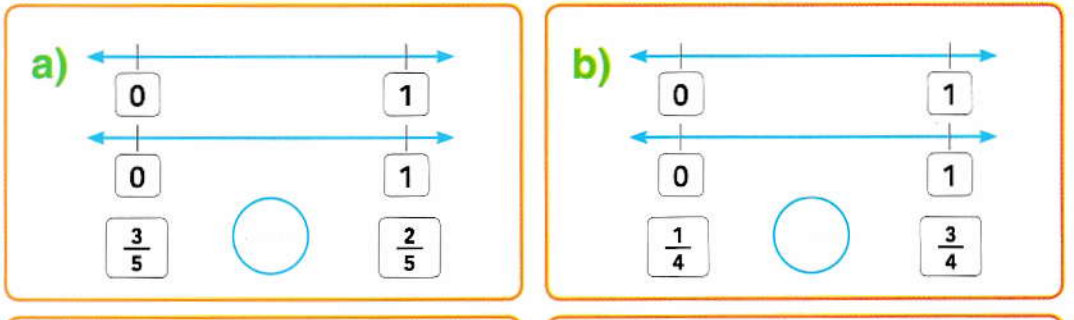
a) $\frac{4}{5}$

b) $\frac{3}{4}$

c) $\frac{6}{6}$

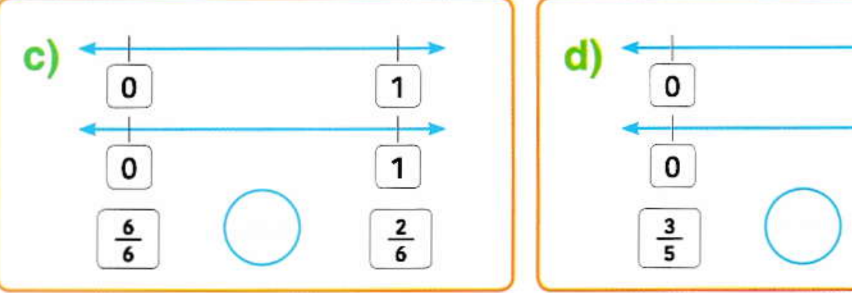


2 Represent each fraction on the number line, then compare using (> , < or =):



a) $\frac{3}{5}$ ◯ $\frac{2}{5}$

b) $\frac{1}{4}$ ◯ $\frac{3}{4}$

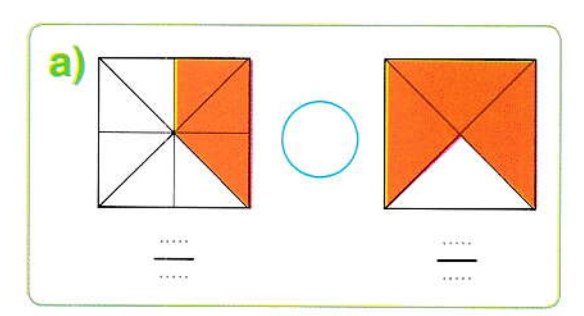


c) $\frac{6}{6}$ ◯ $\frac{2}{6}$

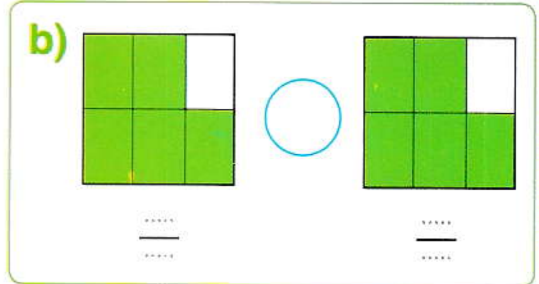
d) $\frac{3}{5}$ ◯ $\frac{5}{5}$

3 **Write the fraction of the shaded part, then compare using (> , < or =):**

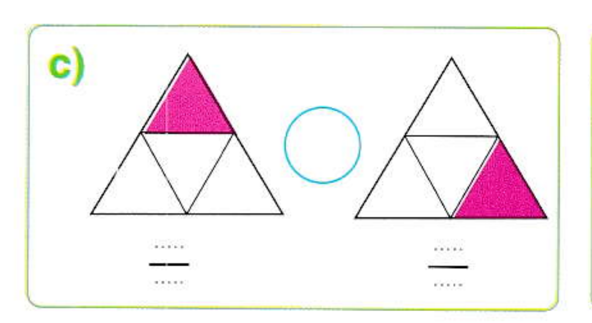
a)



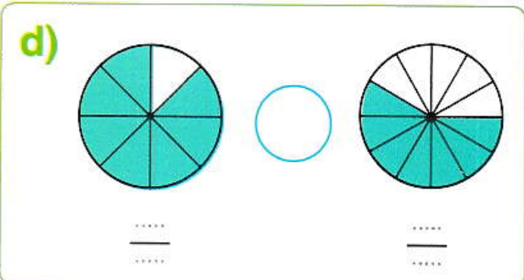
b)



c)



d)

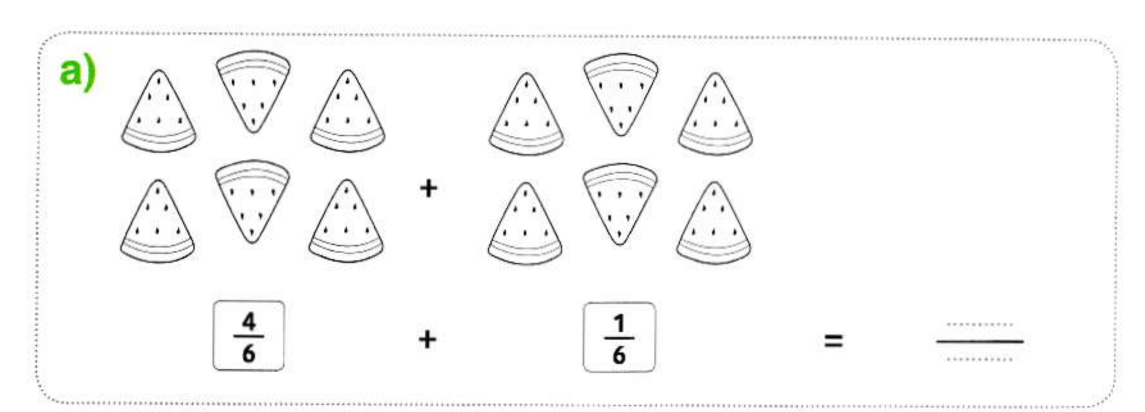


4 **Color and locate to represent each fraction:**

Fraction	Color the fraction set	Number line
a) $\frac{2}{5}$		0 — 1
b) $\frac{3}{4}$		0 — 1
c) $\frac{5}{6}$		0 — 1

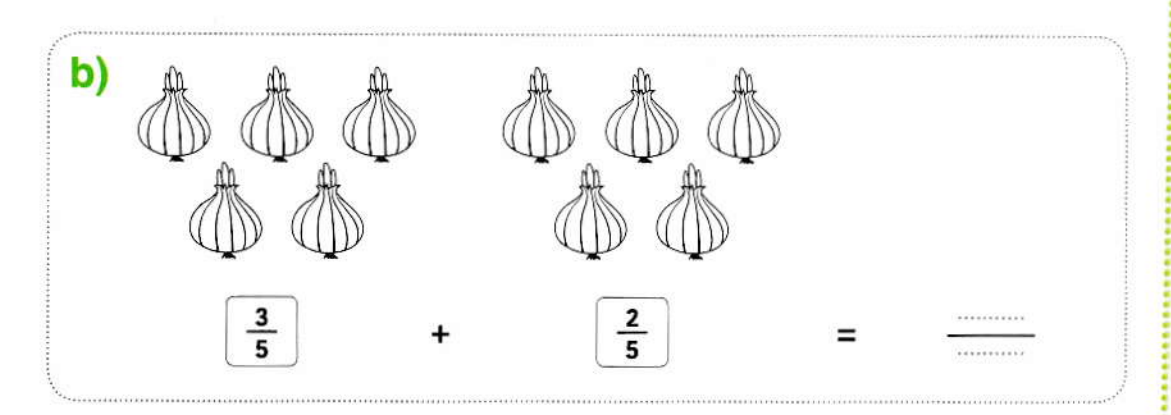
5 Color to represent each fraction, then solve:

a)



$\frac{4}{6} + \frac{1}{6} = \frac{\dots}{\dots}$

b)



$\frac{3}{5} + \frac{2}{5} = \frac{\dots}{\dots}$

6 Read, then solve:

a) One day Salah swam $\frac{3}{5}$ of a kilometer, next day he swam $\frac{2}{5}$.
How many kilometers did Salah swim all together?

____

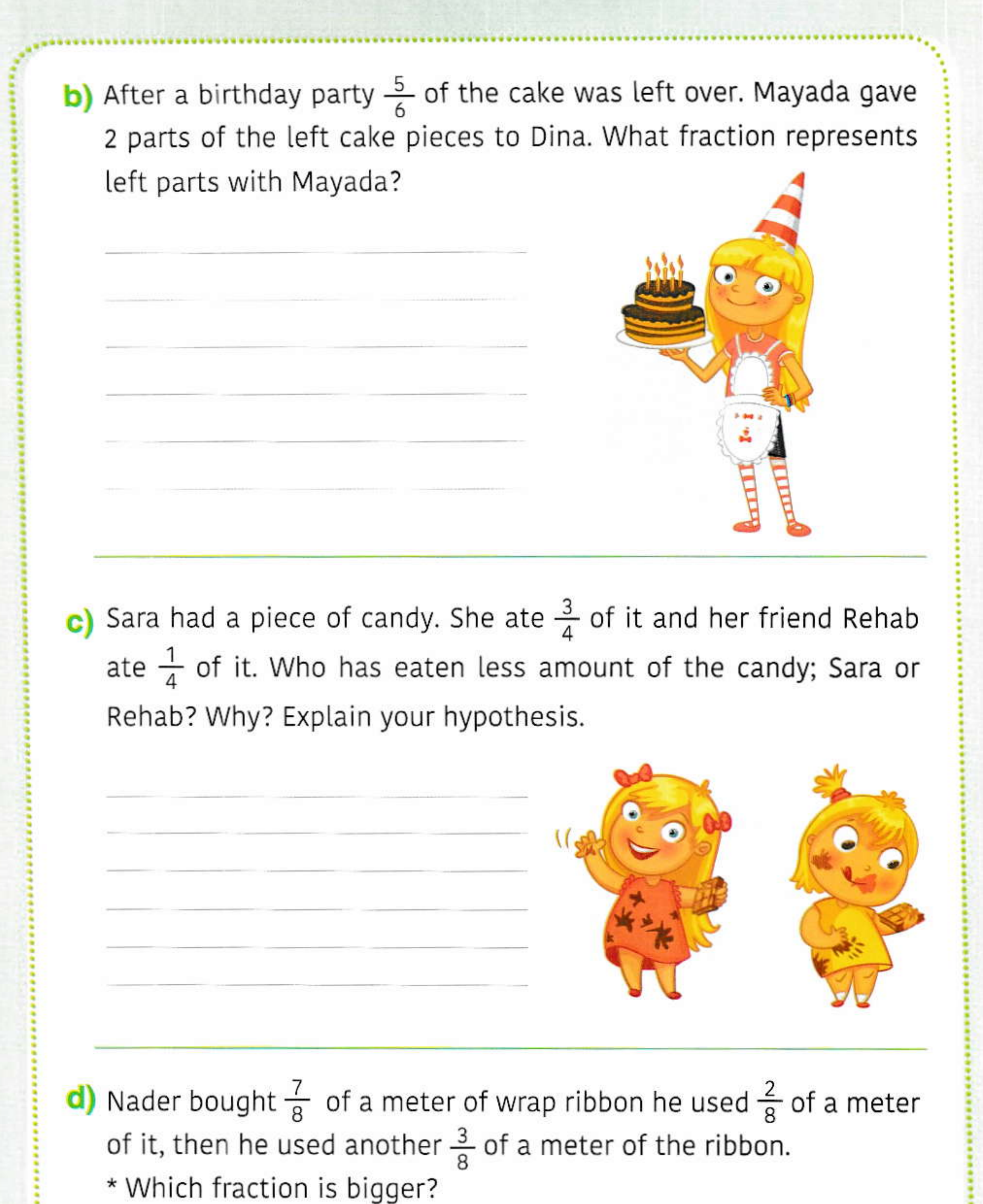
____

____

____

____

____



b) After a birthday party $\frac{5}{6}$ of the cake was left over. Mayada gave 2 parts of the left cake pieces to Dina. What fraction represents left parts with Mayada?

c) Sara had a piece of candy. She ate $\frac{3}{4}$ of it and her friend Rehab ate $\frac{1}{4}$ of it. Who has eaten less amount of the candy; Sara or Rehab? Why? Explain your hypothesis.

d) Nader bought $\frac{7}{8}$ of a meter of wrap ribbon he used $\frac{2}{8}$ of a meter of it, then he used another $\frac{3}{8}$ of a meter of the ribbon.

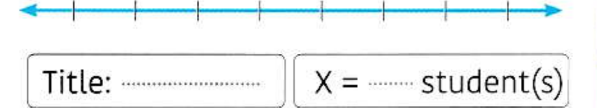
* Which fraction is bigger?

* How many meters were left?

Total meters = ____________________

Left meters = ____________________

7 Use the following table to form a line plot about students, favorite school subject:



Title: .... X = ... student(s)

a) How many students like math more than social studies?

.... - ....

= .... students

b) How many students like English and Arabic?

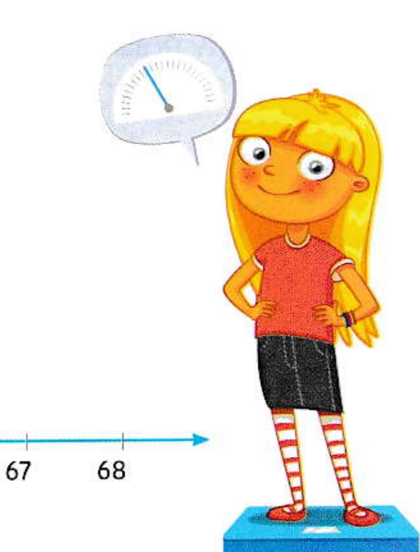
.... + ...

= .... students

Subjects	Number of students
English	10
Arabic	15
Social studies	13
Math	17
Science	15

8 Form a line plot to represent the weight of 25 students:

68	65	63	63	62
64	65	61	65	61
64	66	64	61	64
65	68	62	61	62
65	63	66	67	64



61 62 63 64 65 66 67 68

Weight (in pounds)

Connect on Chapter 3

1 **Write the following numbers in the expanded form:**

a) 24,856 = ... ten thousands + ... thousands + ... hundreds + ... tens + ... ones

b) 3,408 = ... + ... + ... + ...

c) 11,352 = ... + ... + ... + ... + ...

2 **Order the following numbers as required:**

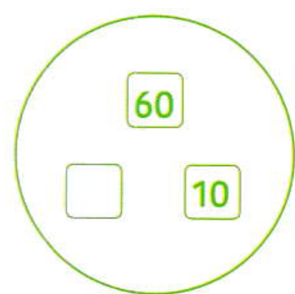
a) From the least to the greatest: 583 , 8530 , 385 , 8350

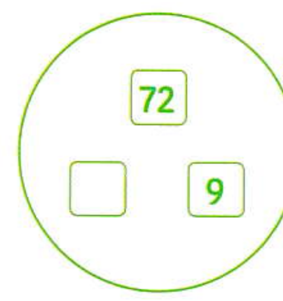
.... , ... , ... , ...

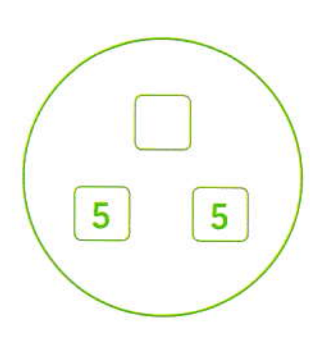
b) From the greatest to the least: 13,256 , 1,356 , 13,526 , 13,625

.... , ... , ... , ...

3 **Multiply or divide to find the missing number in each:**

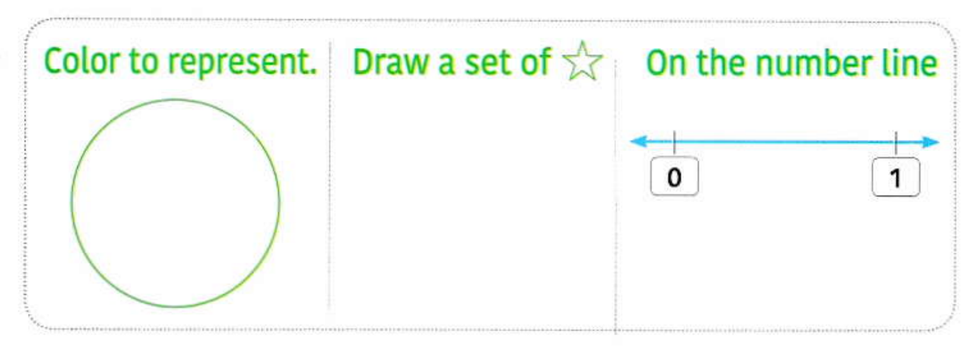






1 Represent the following fractions using the three models:

a) $\frac{2}{5}$



b) Three sevenths.

Color to represent.	Draw a set of ◯	On the number line
		0 ... 1

2 Find the result:

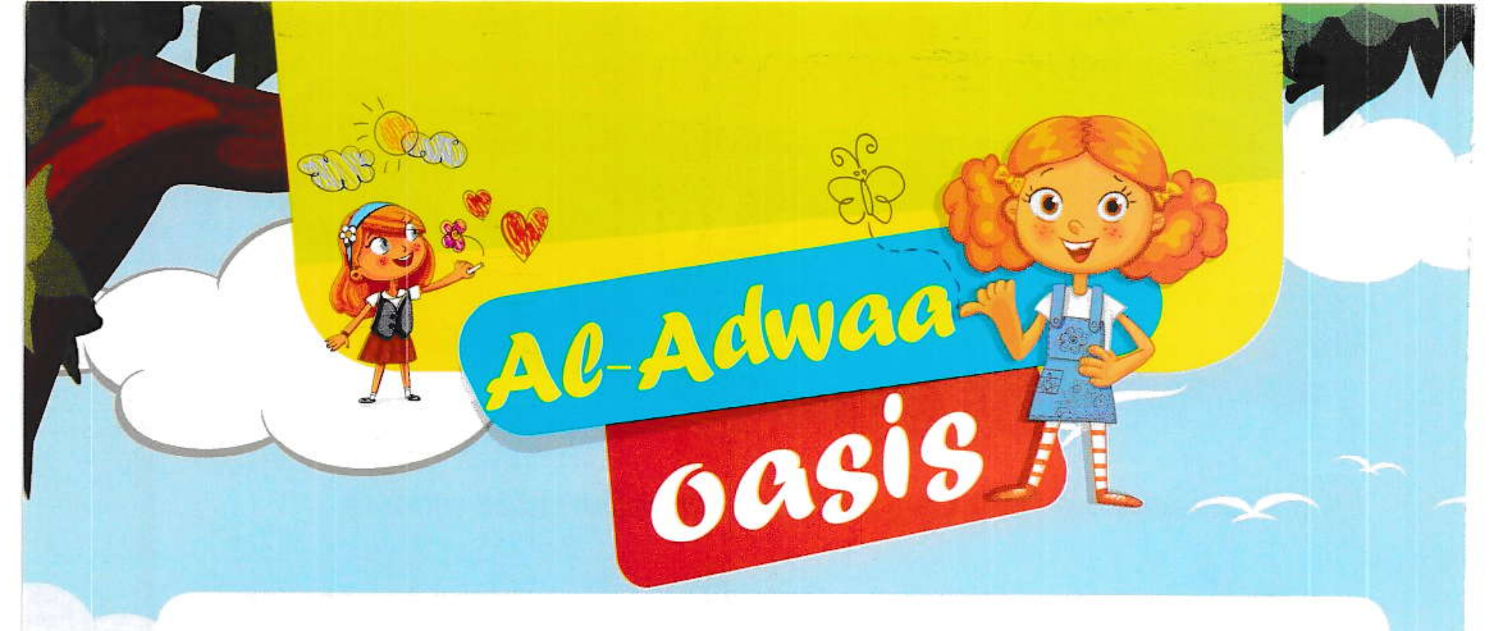
a) $\frac{2}{9} + \frac{5}{9} = \frac{\cdots}{\cdots}$ b) $\frac{6}{7} - \frac{4}{7} = \frac{\cdots}{\cdots}$

3

Sally has finished $\frac{3}{7}$ of her homework.

Dalia has finished $\frac{3}{8}$ of her homework.

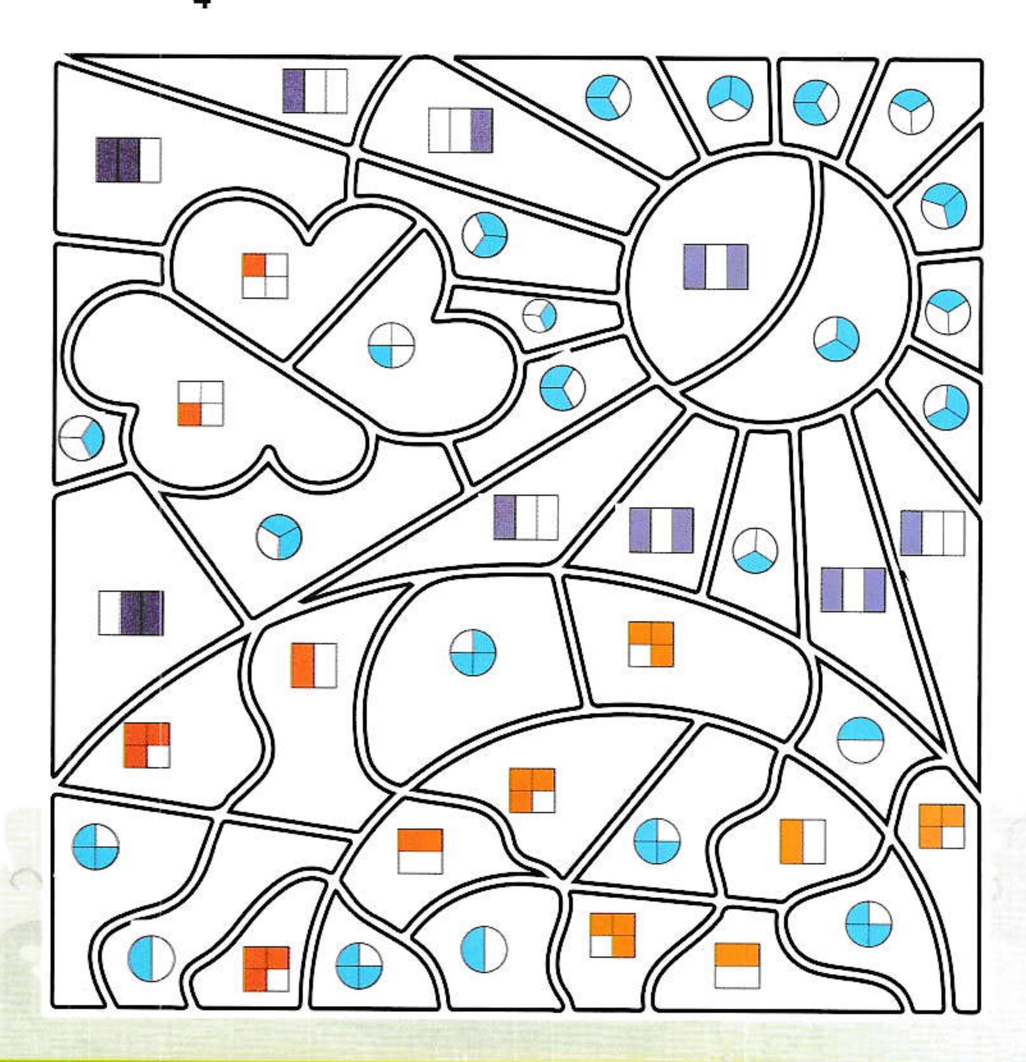
Who has done more homework; Sally or Dalia?

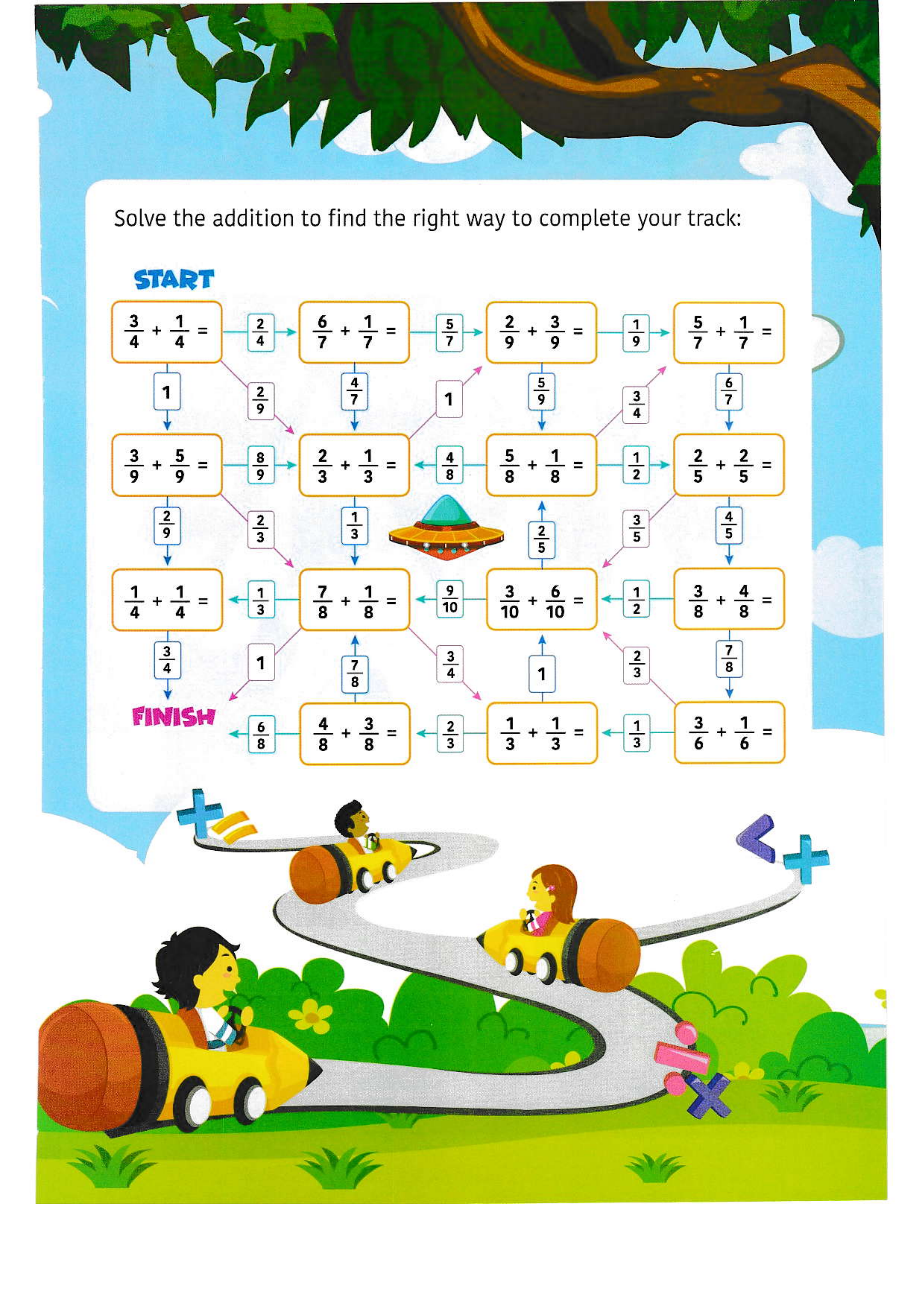


Color the following figure according to the given key:

$\frac{1}{2}$ = blue $\frac{1}{3}$ = purple $\frac{1}{4}$ = white

$\frac{2}{3}$ = yellow $\frac{3}{4}$ = green





Solve the addition to find the right way to complete your track:
START
3/4 + 1/4 =
2/4
6/7 + 1/7 =
5/7
2/9 + 3/9 =
1/9
5/7 + 1/7 =
1
2/9
4/7
1
5/9
3/4
6/7
3/9 + 5/9 =
8/9
2/3 + 1/3 =
4/8
5/8 + 1/8 =
1/2
2/5 + 2/5 =
2/9
2/3
1/3
2/5
3/5
4/5
1/4 + 1/4 =
1/3
7/8 + 1/8 =
9/10
3/10 + 6/10 =
1/2
3/8 + 4/8 =
3/4
1
7/8
3/4
1
2/3
7/8
FINISH
6/8
4/8 + 3/8 =
2/3
1/3 + 1/3 =
1/3
3/6 + 1/6 =

Chapter 4

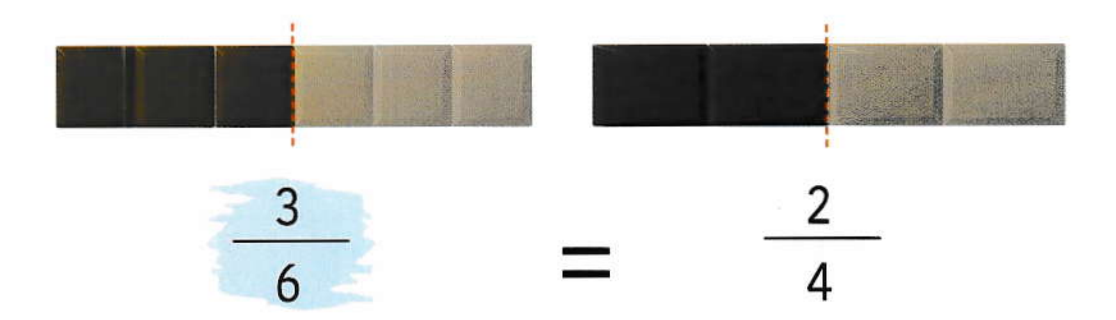
Pacing Guide

Lesson	Instructional Focus	Key vocabulary
Lessons 91 & 92	**(A) Finding equivalent fractions to $\frac{1}{2}$ using bar-model** **(B) Finding equivalent fractions to $\frac{1}{2}$ using number line** **(c) Finding equivalent fractions to $\frac{1}{2}$ using picture model**	• Benchmark fraction • Equivalent • Equivalent fraction • Twelfths
Lesson 93	**Equivalent proper fractions** • Use concrete models to identify equivalent fractions other than $\frac{1}{2}$	
Lessons 94 & 95	**Patterns of equivalent fractions** • Match equivalent fractions. • Explain why two fractions are or are not equivalent. • Define the term equivalent. • Find equivalent fractions. • Describe patterns and relationships between numerators and denominators in equivalent fractions.	• Denominator • Estimation • Numerator • Numeric pattern
Lesson 96	**Representing equivalent fractions on number line** • Solve story problems involving fraction concepts. • Use a number line to generate and show equivalent fractions.	• Equivalent fraction
Lesson 97	**Story problems on equivalent fractions** • Analyze errors to build understanding of volume. • Apply understanding of equivalent fractions to solve story problems. • Describe real-life applications of fractions and equivalent fractions.	
Lesson 98	**Using division in solving sharing problems** • Calculate the area and perimeter of rectangles. • Solve division story problems. • Discuss the relationship between fractions and division.	• Quotient
Lesson 99	**Grouping division problems** • Analyze errors to solve a division problem. • Solve division story problems. • Write a story problem to fit a given context. • Describe real-life applications of division.	
Lesson 100	**Relation between multiplication and division** • Investigate different ways to divide 24 evenly. • Find the missing factor in a fact family. • Write multiplication and division equations to represent fact families. • Explain the relationship between multiplication and division.	

(A) Finding equivalent fractions to ($\frac{1}{2}$) using bar model

What is meant by equivalent fractions?

Amina and Mohamed have 2 equal chocolate bars, Amina divided her bar into 6 equal parts and Mohamed divided his bar into 4 equal parts. If Amina ate 3 sixths while Mohamed ate 2 fourths. Find who ate the half of his chocolate.



$$\frac{3}{6} = \frac{2}{4}$$

$\frac{3}{6} = \frac{1}{2}$ and $\frac{2}{4} = \frac{1}{2}$

The 2 fractions are equal because they represent half of the one whole of the 2 chocolate bars.

$\frac{1}{2}$
$\frac{3}{6}$
$\frac{2}{4}$

Equivalent fractions:

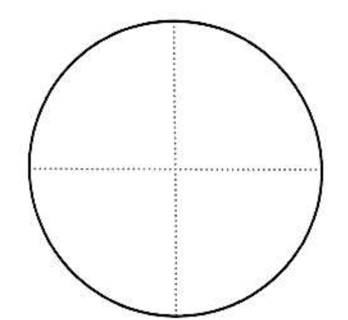
Fractions that show the same amount (value) although they have different numerator and denominator.

Connect:

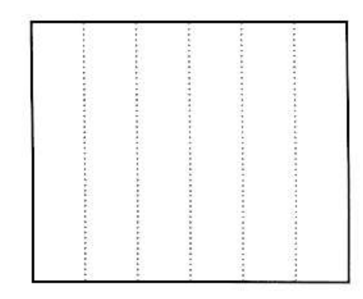
- Let your child think about different fractions that can be equivalent to the half.

Activity 1

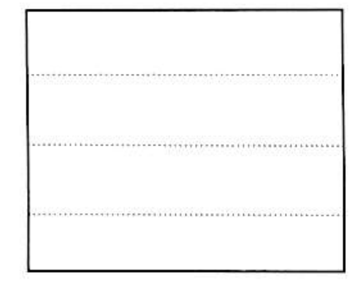
Color half of the following shapes:



$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$

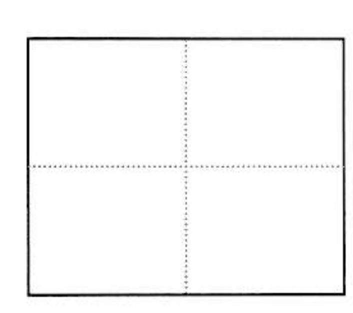


$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$

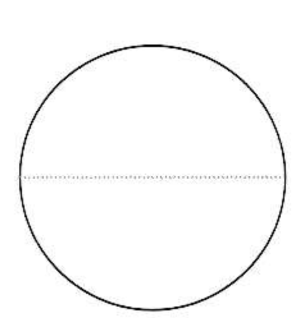


$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$

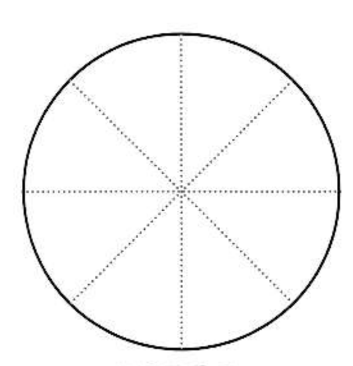
$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$



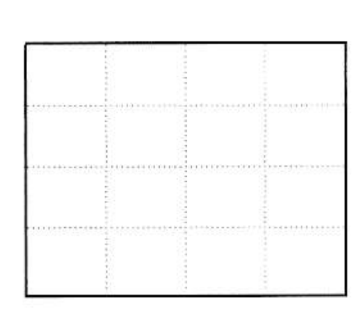
$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$



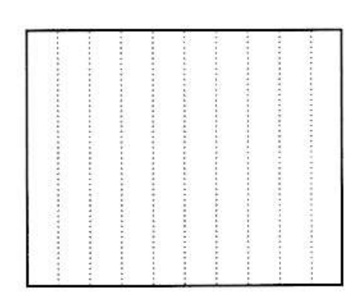
$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$



$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$



$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$



$\frac{1}{2} = \frac{\dots\dots}{\dots\dots}$

Parents' Tips:

- Encourage your child to recognize half of the above shapes visually.

How can we find equivalent fractions using fraction strips on a bar model?

1 WHOLE

$\frac{1}{2}$	$\frac{1}{2}$

- It takes 2 fourths to make one half
  So, $\frac{2}{4} = \frac{1}{2}$

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

- It takes 3 sixths to make one half
  So, $\frac{3}{6} = \frac{1}{2}$

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

- It takes 4 eighths to make one half
  So, $\frac{4}{8} = \frac{1}{2}$

$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

- It takes 5 tenths to make one half
  So, $\frac{5}{10} = \frac{1}{2}$

$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

- It takes 6 twelfths to make one half
  So, $\frac{6}{12} = \frac{1}{2}$

$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$

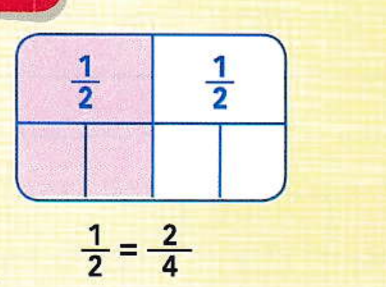
Two fractions are equivalent if they cover the same area of a whole.

Parents' Tips:

- Help your child to divide 1 whole into equal parts using his/her bar model and strips.

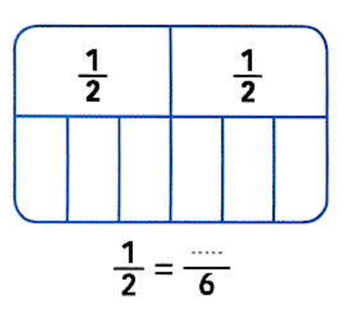
Activity 2 Use fraction strips to find equivalent fractions:

Example



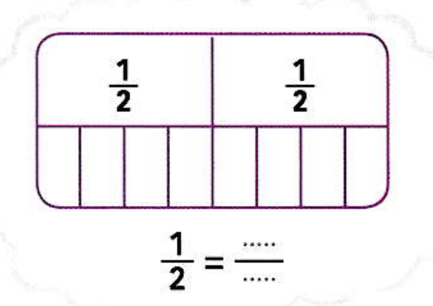
$\frac{1}{2} = \frac{2}{4}$

a)



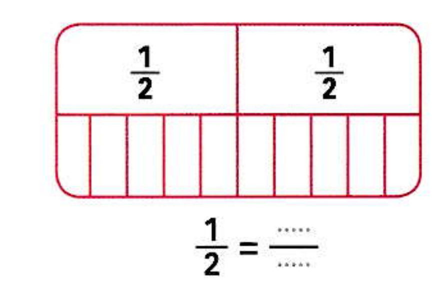
$\frac{1}{2} = \frac{\ldots\ldots}{6}$

b)



$\frac{1}{2} = \frac{\ldots\ldots}{\ldots\ldots}$

c)



$\frac{1}{2} = \frac{\ldots\ldots}{\ldots\ldots}$

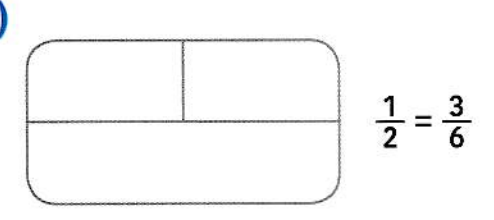
Activity 3 Divide and color the fraction bars as required:

Example

$\frac{1}{2}$		$\frac{1}{2}$	
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

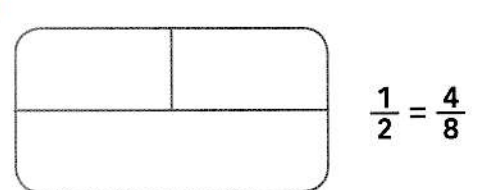
$\frac{2}{2} = \frac{4}{4}$

a)



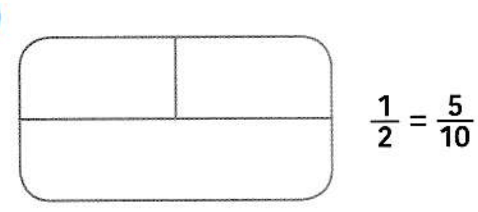
$\frac{1}{2} = \frac{3}{6}$

b)



$\frac{1}{2} = \frac{4}{8}$

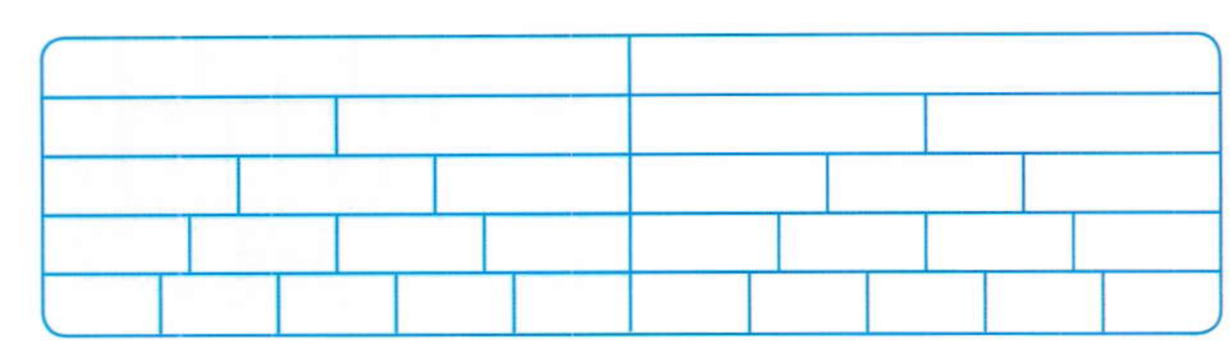
c)



$\frac{1}{2} = \frac{5}{10}$

Parents' Tips:

- Help your child to get equivalent fractions using fractional strips.



Activity 4

Use the fraction bars to complete the fractions to one half ($\frac{1}{2}$):

a) $\frac{1}{2} = \frac{\dots}{4}$

b) $\frac{1}{2} = \frac{\dots}{6}$

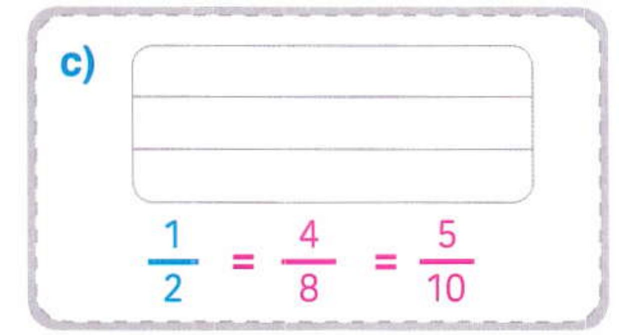
c) $\frac{1}{2} = \frac{\dots}{8}$

d) $\frac{1}{2} = \frac{\dots}{10}$

Activity 5

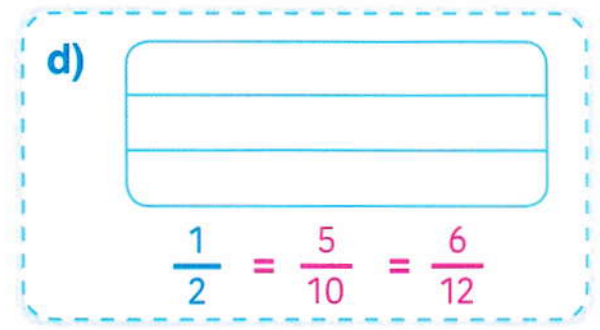
Divide bar models, then color to represent the following equivalent fractions:

a)



$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$

b)



$\frac{1}{2} = \frac{3}{6} = \frac{4}{8}$

c)

$\frac{1}{2} = \frac{4}{8} = \frac{5}{10}$

d)

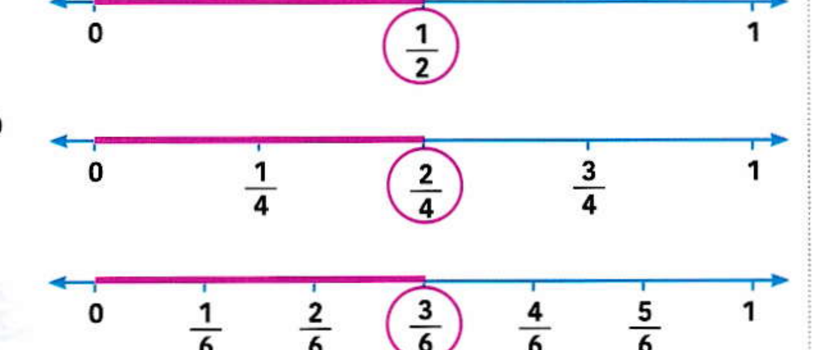
$\frac{1}{2} = \frac{5}{10} = \frac{6}{12}$

Parents' Tips:

- Help your child to divide the above bar models to determine the equivalent fractions.

(B) Finding equivalent fractions to ($\frac{1}{2}$) using number line

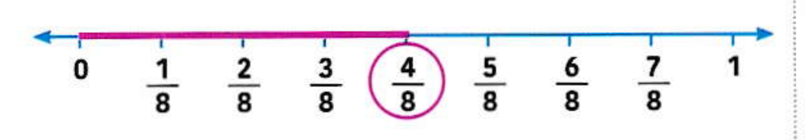
How can we represent equivalent fractions using the number line?



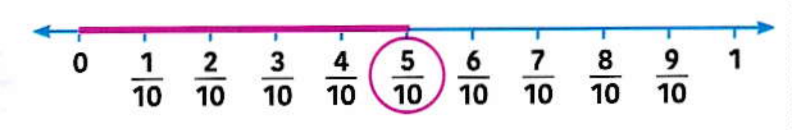
- It takes **two fourths** to represent one half
  So, $\frac{2}{4} = \frac{1}{2}$

- It takes **three sixths** to represent one half
  So, $\frac{3}{6} = \frac{1}{2}$

- It takes **four eighths** to represent one half
  So, $\frac{4}{8} = \frac{1}{2}$



- It takes **five tenths** to represent one half
  So, $\frac{5}{10} = \frac{1}{2}$



- It takes **six twelfths** to represent one half
  So, $\frac{6}{12} = \frac{1}{2}$

0 — $\frac{1}{12}$ — $\frac{2}{12}$ — $\frac{3}{12}$ — $\frac{4}{12}$ — $\frac{5}{12}$ — $\frac{6}{12}$ — $\frac{7}{12}$ — $\frac{8}{12}$ — $\frac{9}{12}$ — $\frac{10}{12}$ — $\frac{11}{12}$ — 1

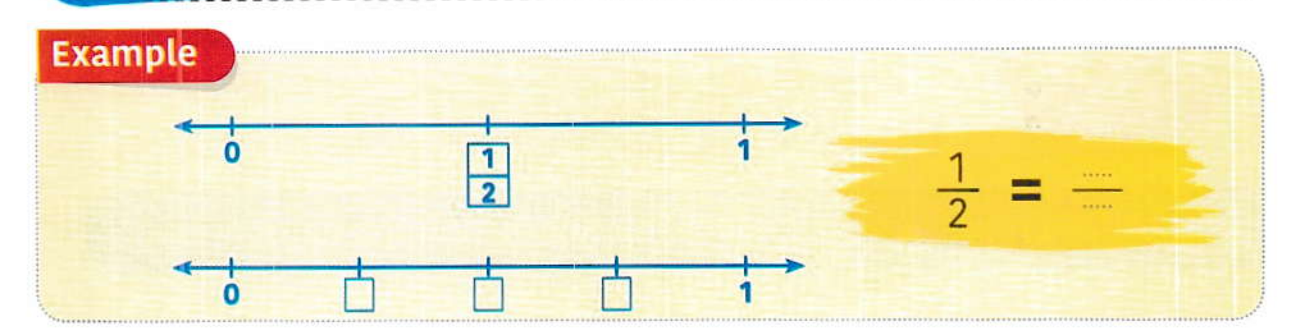
Two fractions are equivalent if they are at the same point on the number line.

Parents' Tips:

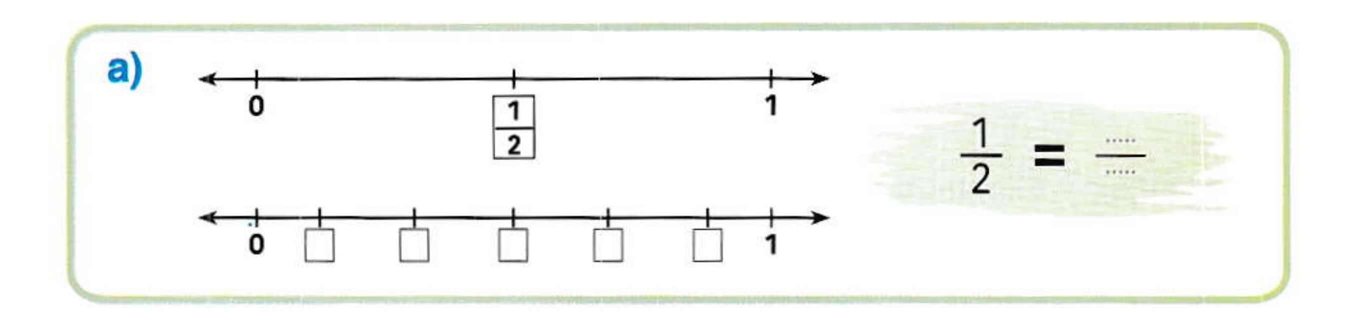
- Encourage your child to recognize the equivalent fractions on the number line that are at the same point.

Activity 6 Label on the number lines to identify the equivalent fractions:

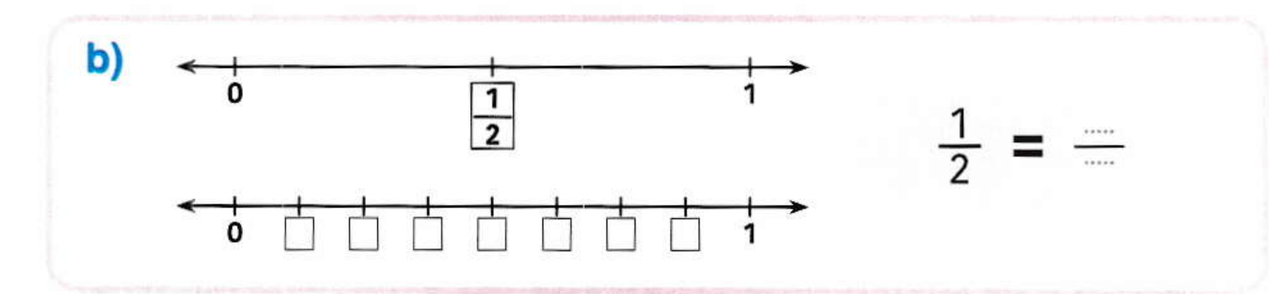
Example



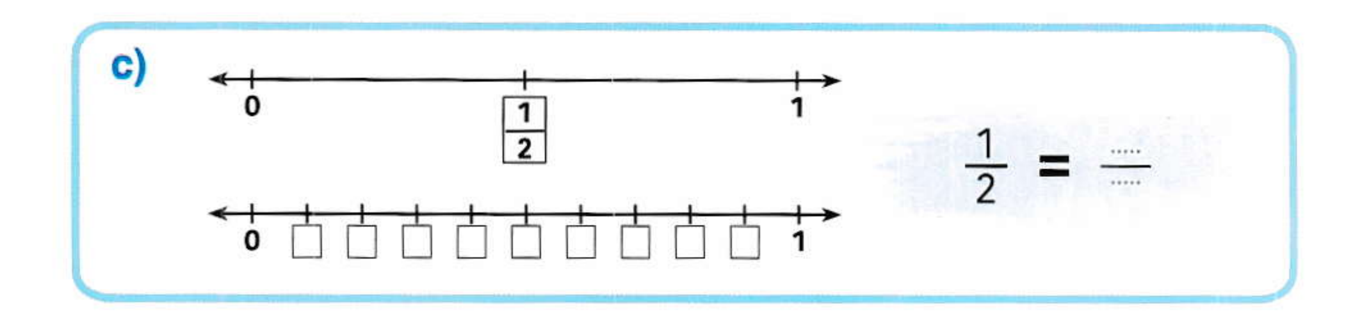
a)



b)



c)



Parents' Tips:

- Help your child to write the missing fractions on the number line.

Activity 7

Use the following number lines to show the given equivalent fractions:

a) $\frac{1}{2} = \frac{3}{6}$

b) $\frac{1}{2} = \frac{6}{12}$

c) $\frac{1}{2} = \frac{2}{4}$

d) $\frac{1}{2} = \frac{5}{10}$

e) $\frac{1}{2} = \frac{4}{8}$

(C) Finding equivalent fractions to ($\frac{1}{2}$) using picture model

How can we find different fractions equivalent to $\frac{1}{2}$ using picture models?

$\frac{1}{2} = \frac{2}{4}$

$\frac{1}{2} = \frac{4}{8}$

The two fractions are equivalent if they represent the same shape and value.

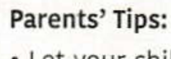
$\frac{1}{2} = \frac{3}{6}$

$\frac{1}{2} = \frac{6}{12}$

$\frac{1}{2} = \frac{5}{10}$

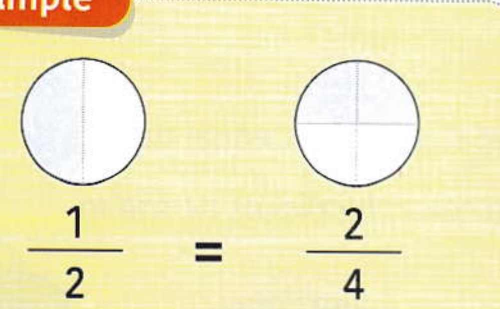
Parents' Tips:

- Let your child draw different picture models to represent equivalent fractions.



Activity 8 Color to represent equivalent fractions:

Example

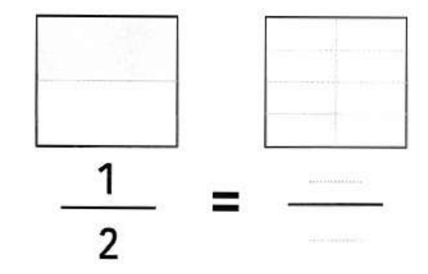


$\frac{1}{2} = \frac{2}{4}$

a)

$\frac{1}{2} = \frac{\ldots}{\ldots}$

b)



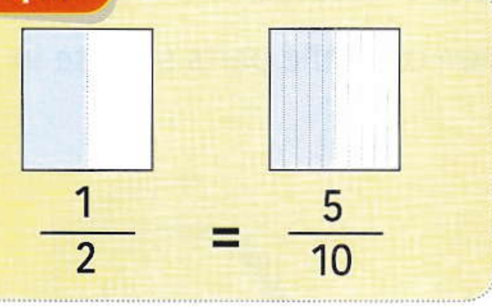
$\frac{1}{2} = \frac{\ldots}{\ldots}$

c)

$\frac{1}{2} = \frac{\ldots}{\ldots}$

Activity 9 Draw models to show equivalent fractions:

Example



$\frac{1}{2} = \frac{5}{10}$

a)

$\frac{1}{2} = \frac{2}{4}$

b)

$\frac{1}{2} = \frac{4}{8}$

c)

$\frac{1}{2} = \frac{6}{12}$

Parents' Tips:

- Encourage your child to find more equivalent fractions using the picture models given above.

Activity 10 Read and solve:

Example

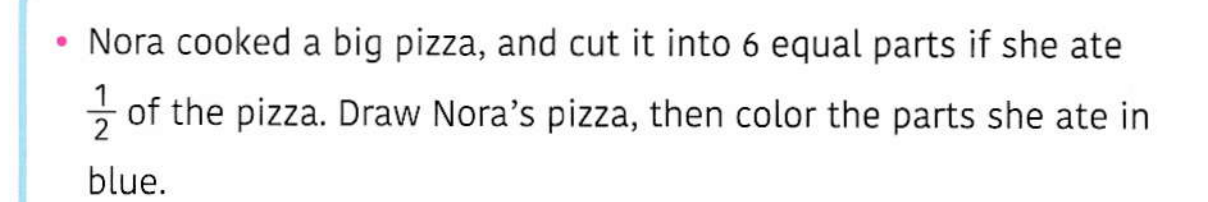
Akram bought a big chocolate cake he cut it into eight equal parts. If he ate $\frac{1}{2}$ of it. Draw Akram's cake, then color the pieces he ate in yellow.

- How many parts in yellow did he eat?

  ...... 4 ...... parts.

- What fraction of the cake is left?

  $\frac{4}{8} = \frac{1}{2}$ parts.



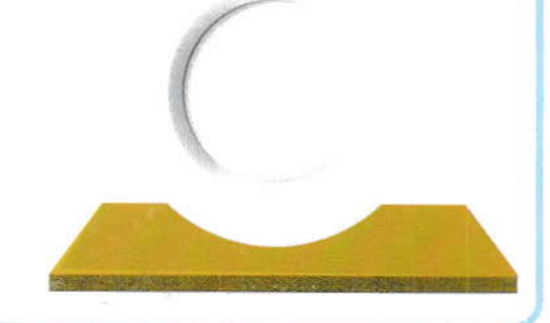
- Nora cooked a big pizza, and cut it into 6 equal parts if she ate $\frac{1}{2}$ of the pizza. Draw Nora's pizza, then color the parts she ate in blue.

  - How many parts did she eat?

    .... parts.

  - What fraction of the pizza is left?

    .... parts.



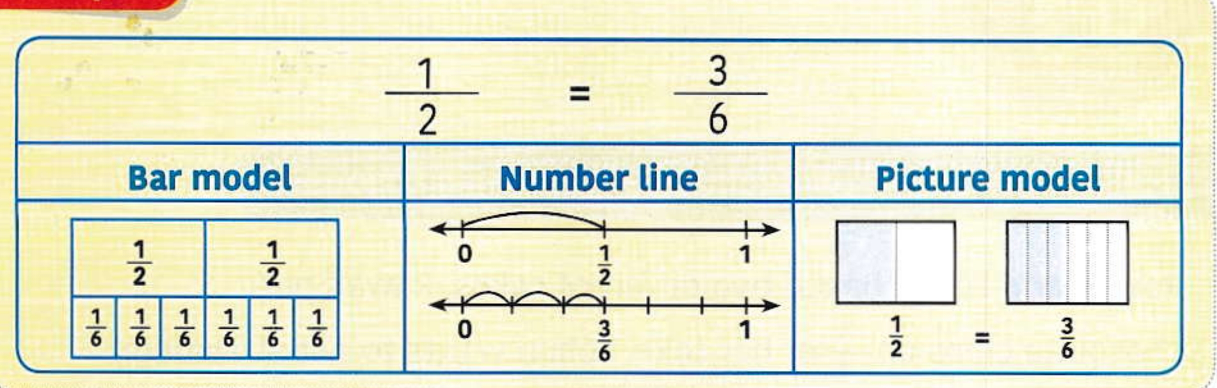
Parents' Tips:

- Help your child to solve story problems about equivalent fractions.

Activity 11

Draw to show equivalent fractions using 3 different models:

Example



a) $\frac{1}{2} = \frac{2}{4}$

b) $\frac{1}{2} = \frac{4}{8}$

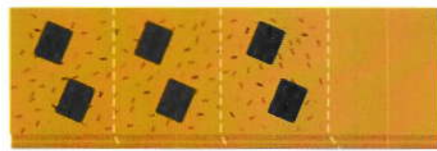
I learned

- Using bar models to find equivalent fractions to $\frac{1}{2}$.
- Using picture models and number lines to find equivalent fractions to $\frac{1}{2}$.

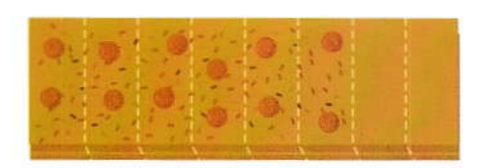
Equivalent proper fractions

How can we form two equivalent proper fractions?

Rawan and Lobna baked two different cakes, Rawan put chocolate chips on $\frac{3}{4}$ of her cake, Lobna wants to put strawberry on the same part of her cake as Rawan if her cake is divided into eighths. How many $\frac{1}{8}$s of the cake does she need to cover with strawberry?



- Dividing Lobna's cake into 8 equal parts.



$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$$\frac{3}{4} = \frac{6}{8}$$

- Rawan needs to cover $\frac{6}{8}$ (six eighths) of the cake with strawberry to represent $\frac{3}{4}$ (three fourths) of chocolate chips.

Note

- Two fractions are equivalent if they have the same values and cover the same number of parts of a whole.

Connect:

- Give your child some picture models for different fractions and let him/her cross out the fraction models that are not equivalent to $\frac{1}{2}$.

Activity 1 Color, then write the equivalent fractions:

Example

$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{1}{4} = \frac{2}{8}$

a)

$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{\dots\dots}{2} = \frac{4}{8}$

b)

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{2}$		$\frac{1}{2}$	

$\frac{2}{4} = \frac{\dots\dots}{2}$

c)

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$
$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	

$\frac{\dots\dots}{6} = \frac{2}{3}$

d)

$\frac{1}{2}$			$\frac{1}{2}$		
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

$\frac{\dots\dots}{2} = \frac{3}{6}$

e)

$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{3}{4} = \frac{\dots\dots}{8}$

f)

$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{\dots\dots}{4} = \frac{4}{8}$

g)

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$
$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	

$\frac{\dots\dots}{6} = \frac{3}{3}$

Parents' Tips:

- Help your child to use coloring for getting an equivalent fraction.

Divide the bar models, then color to find the equivalent fractions:

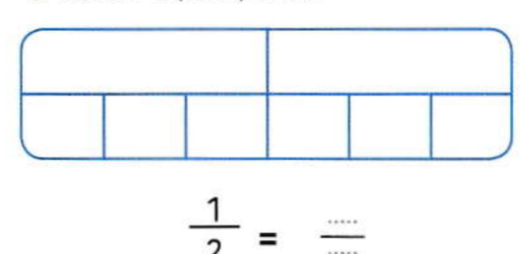
Example

Divide the bar model into 8 equal parts:

$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$			
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$$\frac{3}{4} = \frac{6}{8}$$

a) Into 6 equal parts:



$\frac{1}{2} = \frac{\dots}{\dots}$

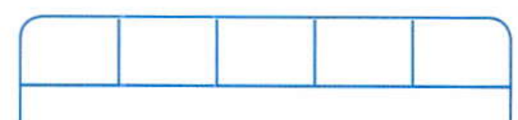
b) Into 10 equal parts:

$\frac{1}{2} = \frac{\dots}{\dots}$

c) Into 6 equal parts:

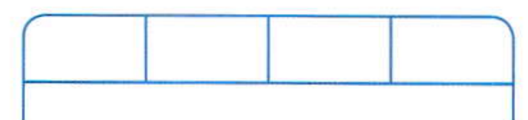
$\frac{2}{3} = \frac{\dots}{\dots}$

d) Into 10 equal parts:



$\frac{3}{5} = \frac{\dots}{\dots}$

e) Into 12 equal parts:



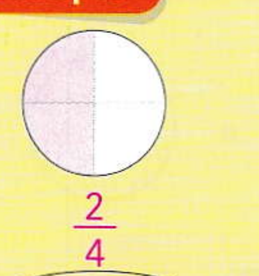
$\frac{3}{4} = \frac{\dots}{\dots}$

Parents' Tips:

- Encourage your child to find equivalent fractions using bar models.

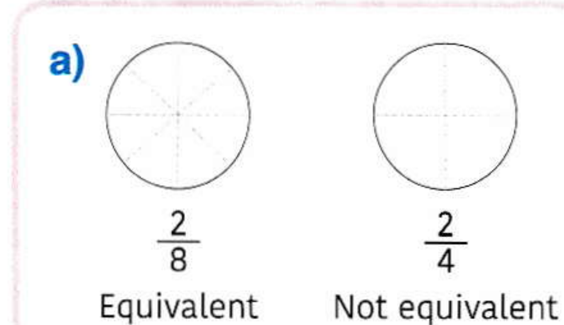
Color to represent the given fractions, then circle the correct answer:

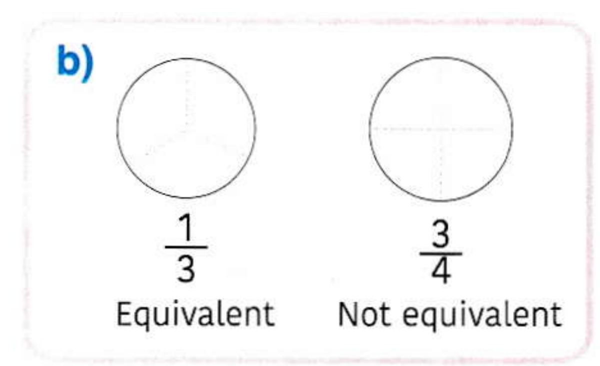
Example

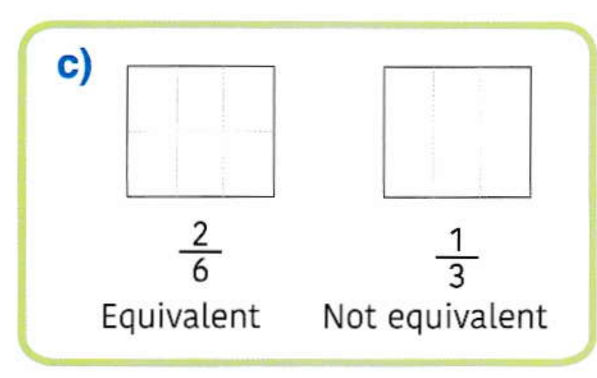


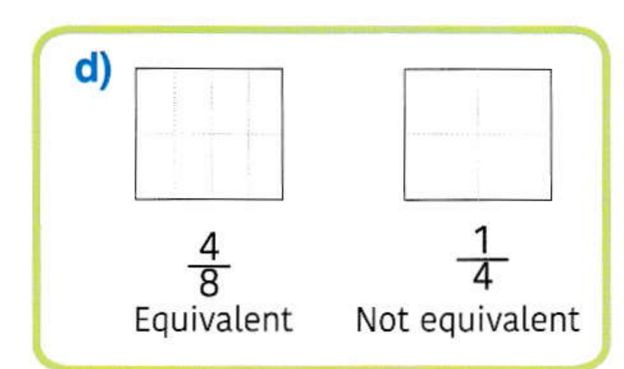
$\frac{2}{4}$ $\frac{1}{2}$

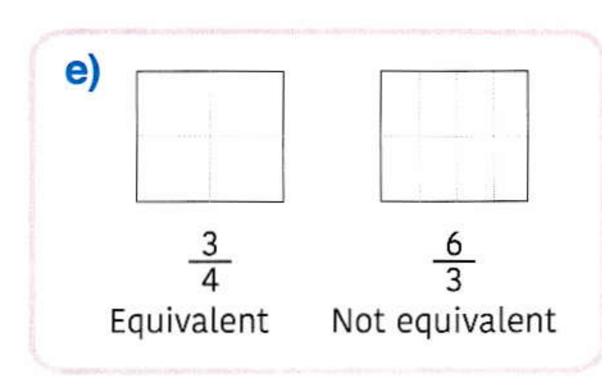
(Equivalent) **Not equivalent**

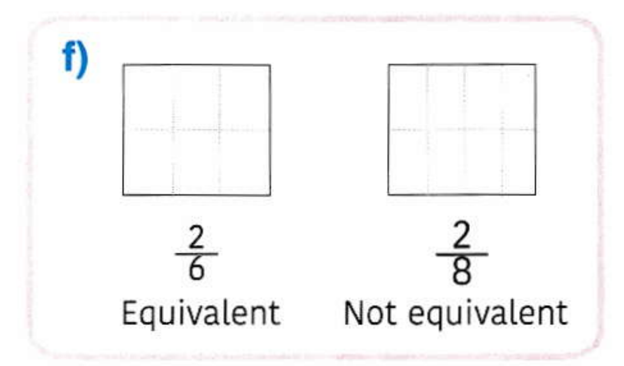


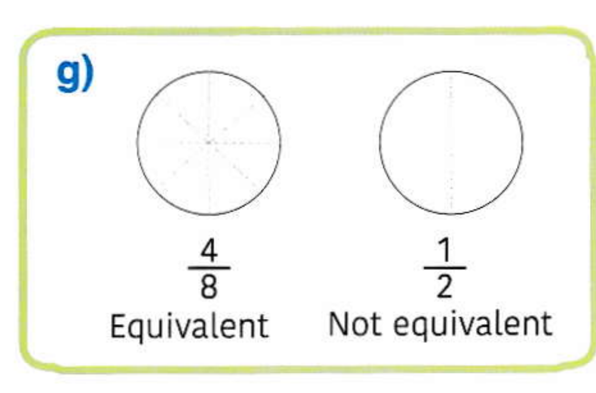








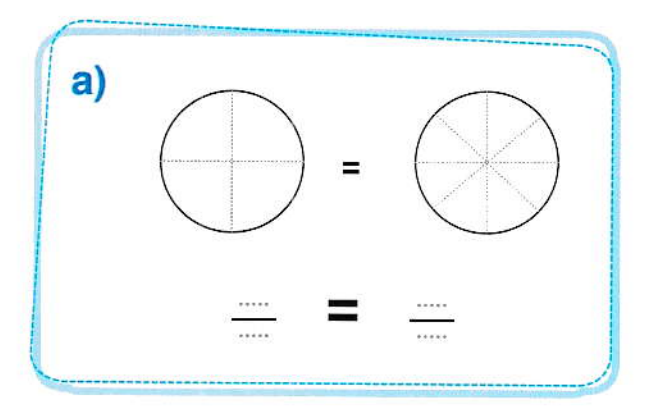


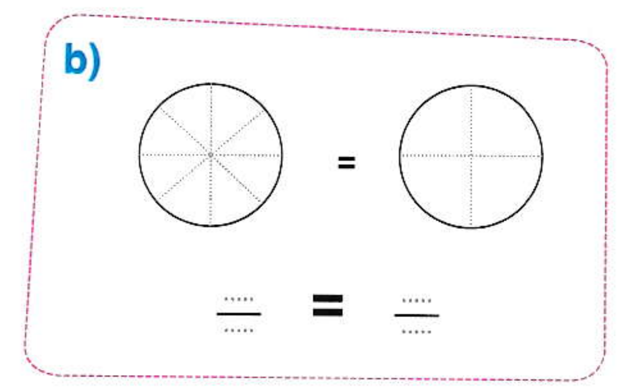


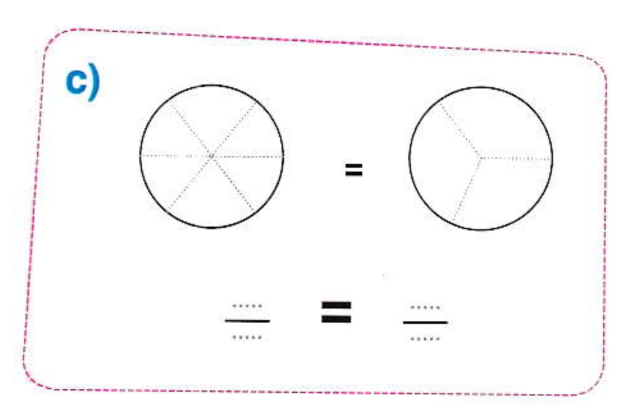
Parents' Tips:

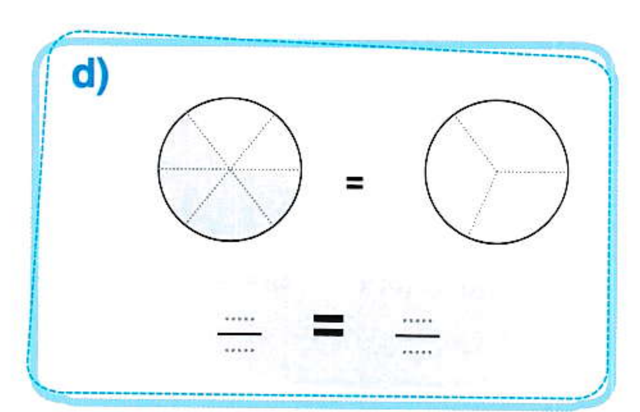
- Help your child to choose the correct answer (equivalent or not equivalent).

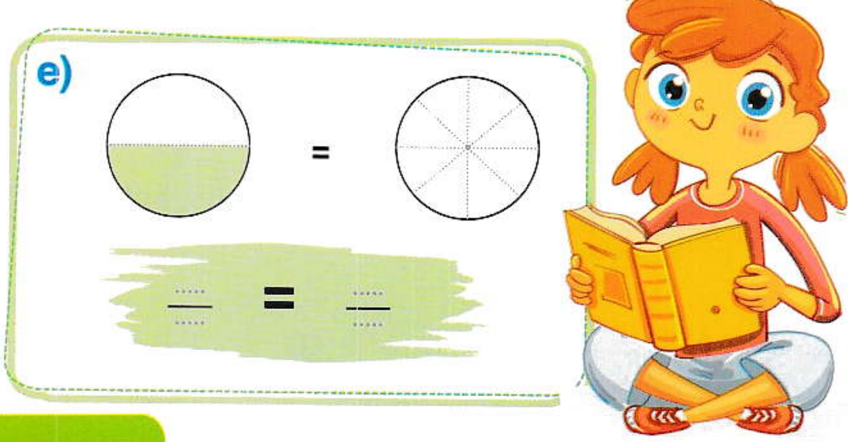
Color and write the equivalent fractions for the given figures:







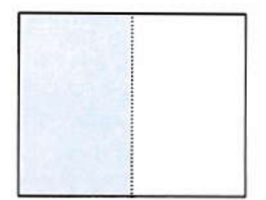
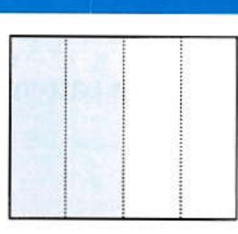
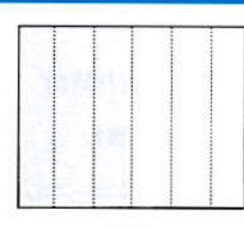
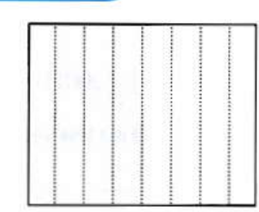




- Using models to identify equivalent fractions other than $\frac{1}{2}$.

Patterns of equivalent fractions

How can we identify the pattern of equivalent fractions?

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$$

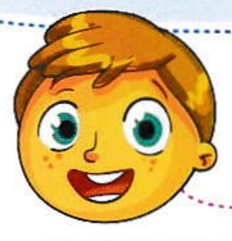
I found that the denominator in each fraction is twice (2 times or double) the numerator $\frac{1}{2}$ $\times 2$

I found that the numerator increases by one each time

$$\frac{1}{2} \xrightarrow{+1} \frac{2}{4} \xrightarrow{+1} \frac{3}{6} \xrightarrow{+1} \frac{4}{8}$$

I found that the denominator increases by two each time

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} \quad (+2, +2, +2)$$



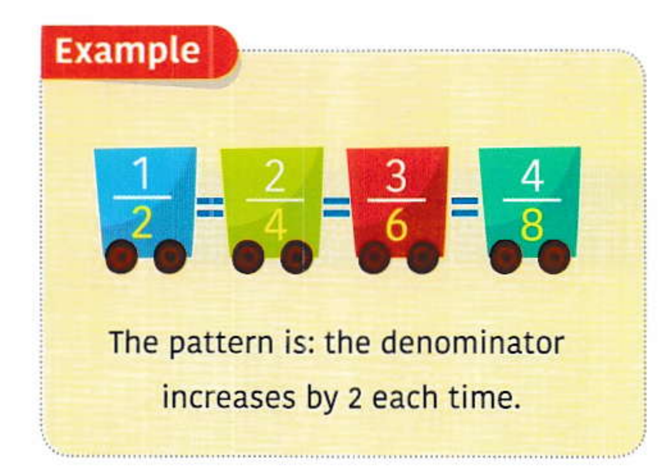
I found that the numerator in each fraction is half the denominator.

Identifying patterns and the relation between numerators and denominators help us to understand equivalent fractions better.

Connect:

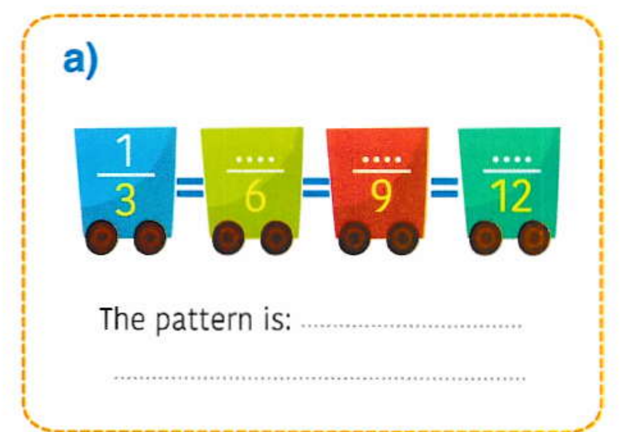
- Revise with your child quadrilaterals and make sure that he/she knows the name of each one.

Complete, then describe the pattern for the following unit fractions:



The pattern is: the denominator increases by 2 each time.

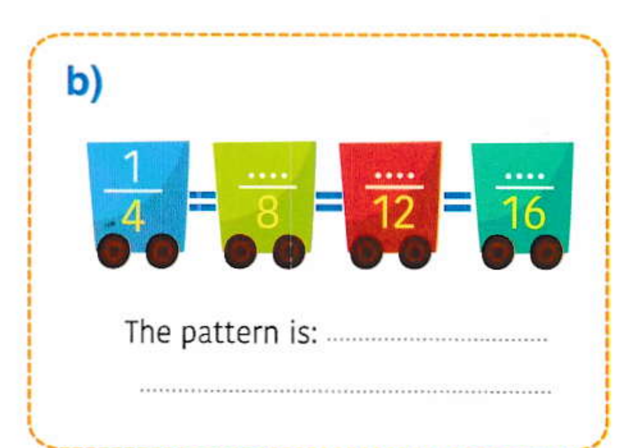
a)



The pattern is: ....

....

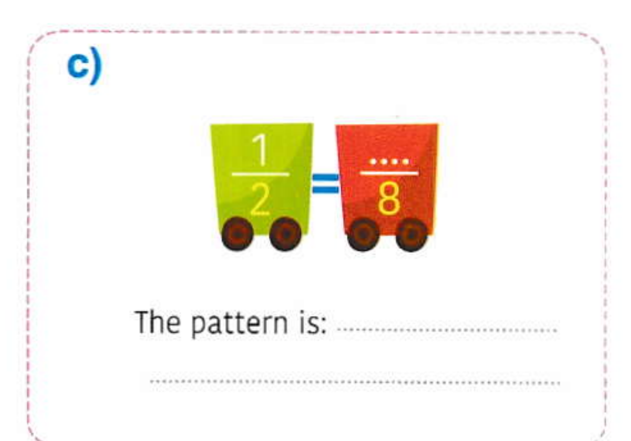
b)



The pattern is: ....

....

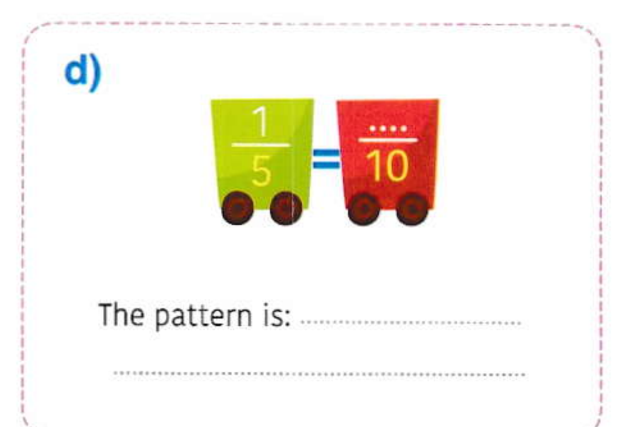
c)



The pattern is: ....

....

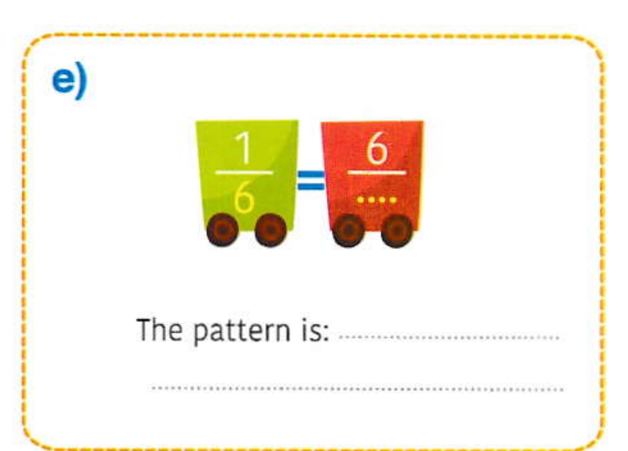
d)



The pattern is: ....

....

e)



The pattern is: ....

....

Parents' Tips:

- Help your child to describe all of the previous patterns.

Color the correct number to complete the equivalent fractions:

Example

$\frac{1 \times 3}{8 \times 3} = \frac{3}{24}$

5 3 8

a) $\frac{1}{5} = \frac{10}{\dots}$

10 5 50

b) $\frac{1}{7} = \frac{\dots}{14}$

2 14 7

c) $\frac{1}{9} = \frac{9}{\dots}$

9 10 81

d) $\frac{1}{6} = \frac{\dots}{24}$

7 2 4

e) $\frac{1}{4} = \frac{9}{\dots}$

2 9 36

f) $\frac{2}{10} = \frac{10}{\dots}$

50 10 100

g) $\frac{3}{4} = \frac{\dots}{16}$

4 12 16

I learned

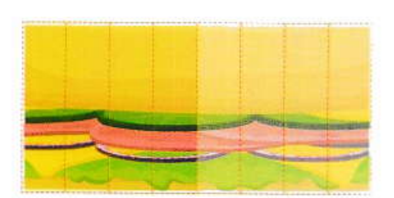
- Defining the term "Equivalent".
- Describing patterns and the relation between numerators and denominators in equivalent fractions.

Representing equivalent fractions on number line

How can we represent equivalent fractions on a number line?

Khaled and Hanan had 2 sandwiches of the same size, if Khaled ate $\frac{2}{4}$ of his sandwich, while Hanan ate $\frac{4}{8}$ of her sandwich. Did they eat an equal amount of their sandwiches?

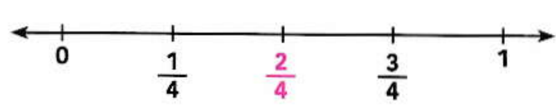
Explain your answer using the number line.



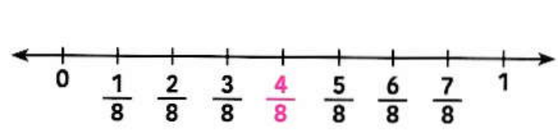
$$\frac{2}{4} = \frac{4}{8}$$

To show the equality of $\frac{2}{4}$ and $\frac{4}{8}$ using number line:

- Draw a number line with 4 equal parts and label the fraction $\frac{2}{4}$.



- Draw another number line with 8 equal parts and label the fraction $\frac{4}{8}$.



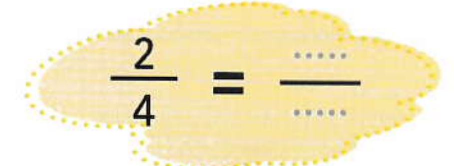
So, we can say that any two fractions are equivalent if they are at the same point on the number line.

So, $\frac{2}{4} = \frac{4}{8}$

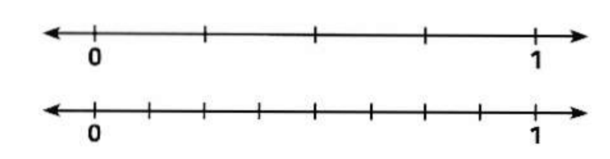
Connect:

- Revise with your child equivalent fractions by solving some story problems and let him/her explain his/her thinking by drawing picture models.

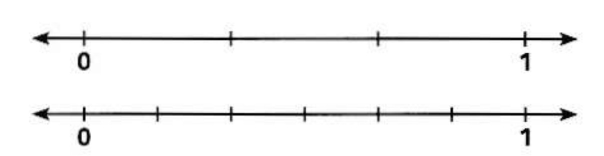
Activity 1: Find the equivalent fractions using the given number lines:



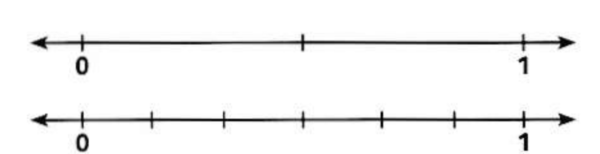
$\frac{2}{4} = \frac{\dots}{\dots}$



$\frac{2}{3} = \frac{\dots}{\dots}$



$\frac{3}{6} = \frac{\dots}{\dots}$



Activity 2: Use the given number lines as required:

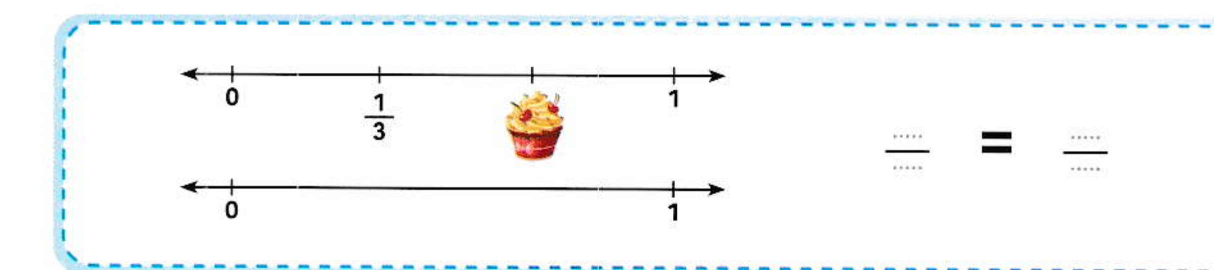
Show that $\frac{2}{8}$ and $\frac{1}{4}$ are equivalent.

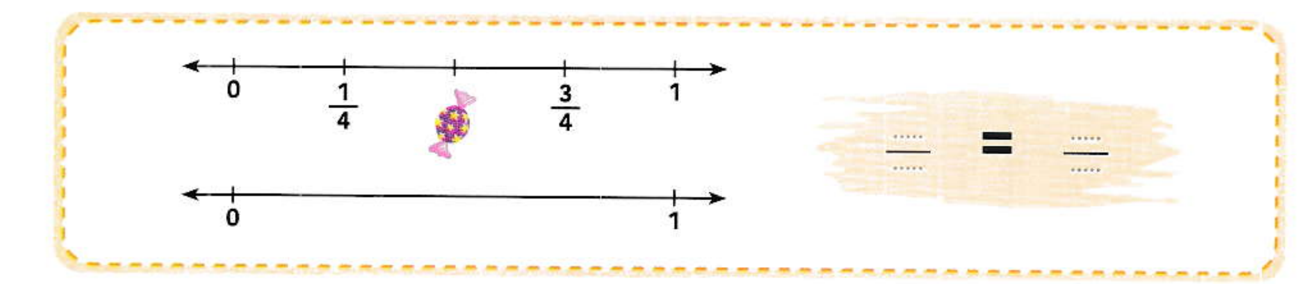
Show that $\frac{1}{2}$ and $\frac{4}{8}$ are equivalent.

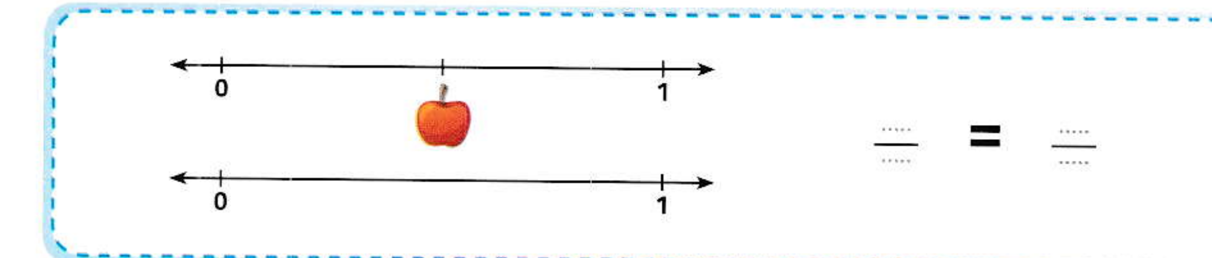
Parents' Tips:

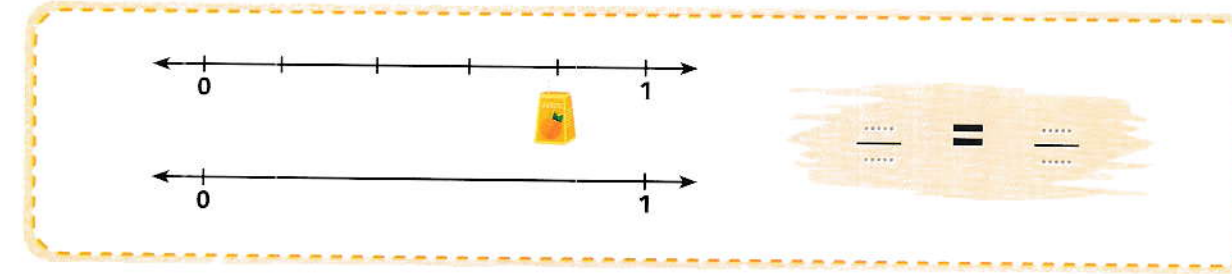
- Encourage your child to find equivalent fractions using the number line.

Find the missing fractions on the number line, then draw to make your equivalent fractions:









I learned

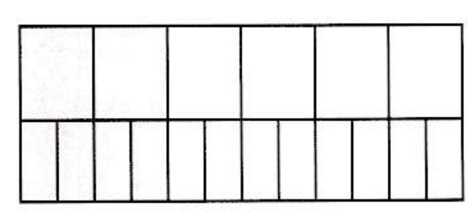
- Using a number line to generate and show equivalent fractions.

Story problems on equivalent fractions

How can we solve story problems involving equivalent fractions?

Haidy and Nehal made 2 large equal pizzas. If Haidy divided her pizza into 6 equal parts and ate $\frac{2}{6}$ of her pizza while Nehal divided her pizza into 12 equal parts and both of them ate the same amount (fraction) of their pizzas. Find the fraction representing what Nehal ate.

- **Using bar models:**

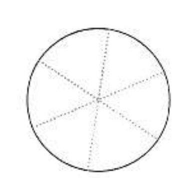


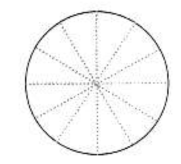
$\frac{2}{6}$

$\frac{4}{12}$

$\frac{2}{6} = \frac{4}{12}$

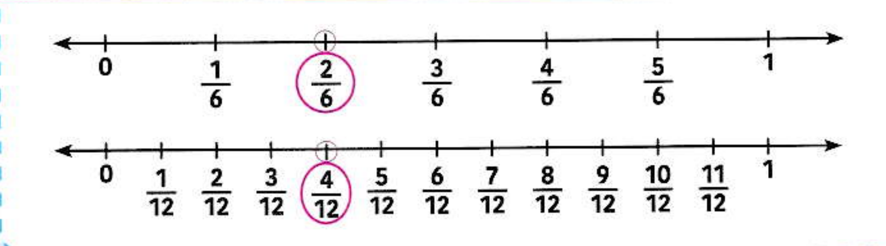
- **Using picture models:**





$\frac{2}{6} = \frac{4}{12}$

- **Using number line:**



$\frac{2}{6} = \frac{4}{12}$

Nehal ate 4 slices of her pizza.
What she ate as a fraction is $\frac{4}{12}$.

$$\frac{2 \times 2}{6 \times 2} = \frac{4}{12}$$

Connect:

- Revise with your child some problems about whether or not the shape of a container changes the volume and real-world problems about equivalent fractions.

Activity 1 Read, then solve:

a) Sama and Yehiya had two cakes, Sama cut her cake into five equal parts and ate $\frac{1}{5}$ of it. Yehiya cut his cake into ten equal parts. What fraction of cake must Yehiya eat if he wants to eat the same amount of cake as Sama? Solve using 3 models.

Bar model:	Picture model:
Number line:	

b) Dina ate $\frac{3}{4}$ of her bread, Seif wants to eat the same amount of his bread as Dina, if his bread is cut into 12 equal parts. What is the fraction that represents the pieces of bread he should eat? Solve using 3 models.

Bar model:	Picture model:
Number line:	

Parents' Tips:
- Help your child to solve story problems on equivalent fractions.

c) Rasha and Ramy had 2 bottles with 1 liter of water in each, Rasha drank $\frac{2}{5}$ of her bottle. Ramy wanted to drink the same amount of water as Rasha if he measured his amount of water in tenths.
How much water did he need to drink?
Find the equivalent fraction using 3 models.

Bar model:	Picture model:
Number line:	

- Applying equivalent fractions in solving story problems in real life.

Using division in solving sharing problems

How can we use division in solving sharing problems?

Amr, Laila and Asmaa want to buy ice cream. If the seller has only 6 scoops 3 of them are strawberry and the other 3 are chocolate. How can the seller divide the 2 flavors equally among the 3 friends?

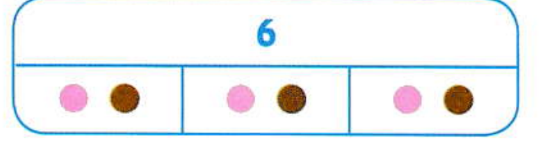
Using hand out method

He gives each child 1 scoop of strawberry and 1 scoop of chocolate. So, each one of them has 2 scoops.

The division equation is $6 \div 3 = 2$ scoops

To represent the division equation on the bar model we can draw dots which represent each scoop.

$6 \div 3 = 2$ scoops



- Revise with your child how to find the area and perimeter of rectangles.

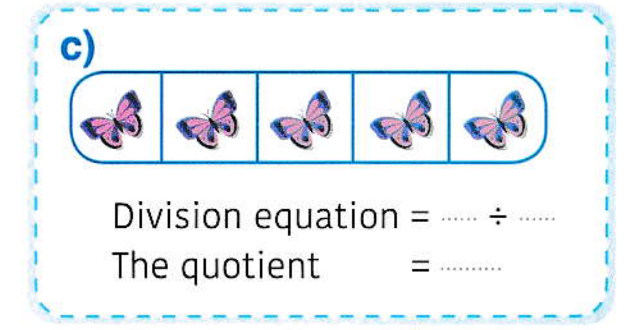
Activity 1 Write the division equation for each bar model:

Example

Division equation = 12 ÷ 4

The quotient = 3

a)



Division equation = ... ÷ ......

The quotient = ...

b)

Division equation = ... ÷ ......

The quotient = ...

c)

Division equation = ... ÷ ......

The quotient = ...

Activity 2 Draw to show the given equations, then solve:

Example

16 ÷ 4 = 4

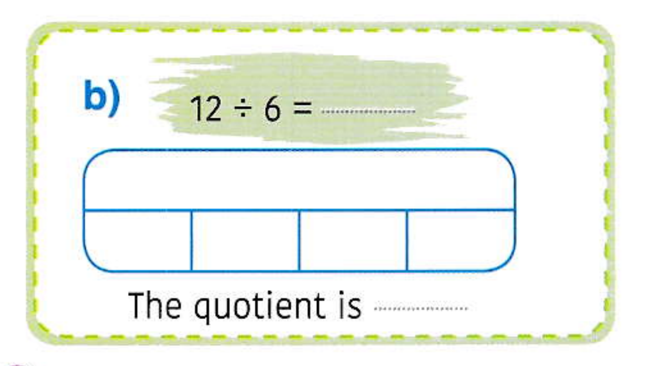
16

The quotient is 4

a) 20 ÷ 5 = ...

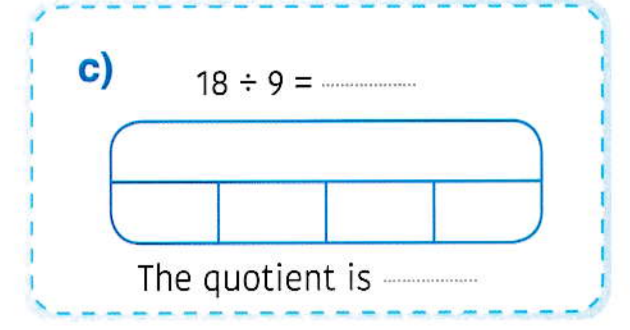
The quotient is ....

b) 12 ÷ 6 = ...



The quotient is ....

c) 18 ÷ 9 = ...



The quotient is ....

Parents' Tips:

- Help your child to find the quotient of any division.

Activity 3 Read, then solve:

Example

Rabab has 21 pens she wants to share them equally among 3 of her friends. How many pens would each friend get?

- Total number = 21
- Division equation: 21 ÷ 3 = 7

a) Seleem bought 10 books which he wants to split evenly between 2 of his friends. How many books will each friend take?

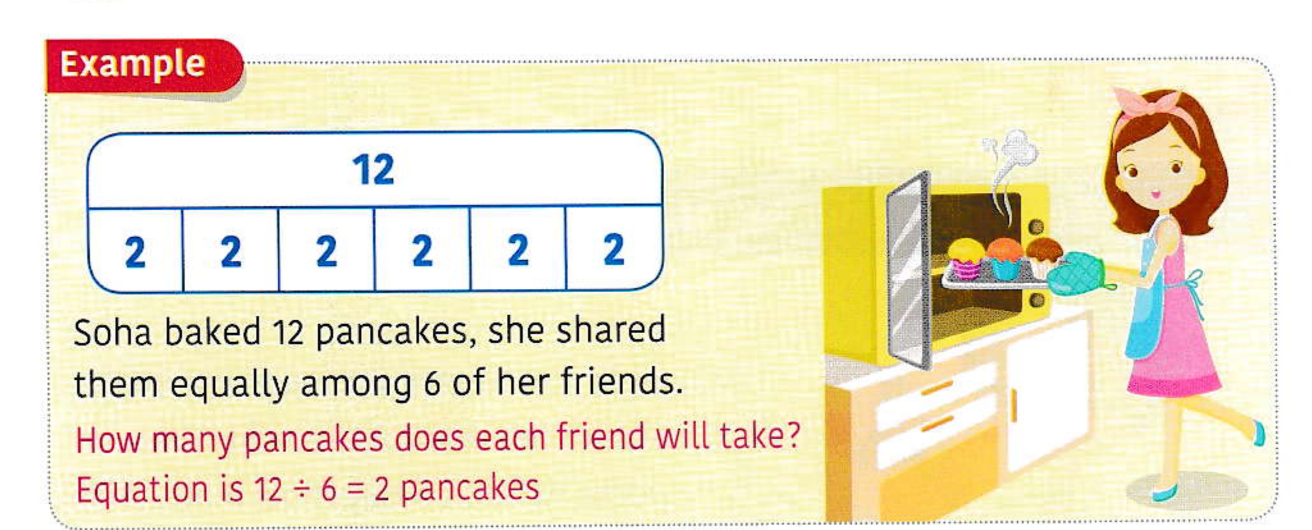
- Total number = ...
- Division equation: .... ÷ .... = ...

b) A farmer wants to feed his 6 cows with grass if he has 30 bunches of grass. How many bunches would each cow eat?

- Total number = ...
- Division equation: .... ÷ .... = ...

Parents' Tips:
- Encourage your child to solve division story problems.

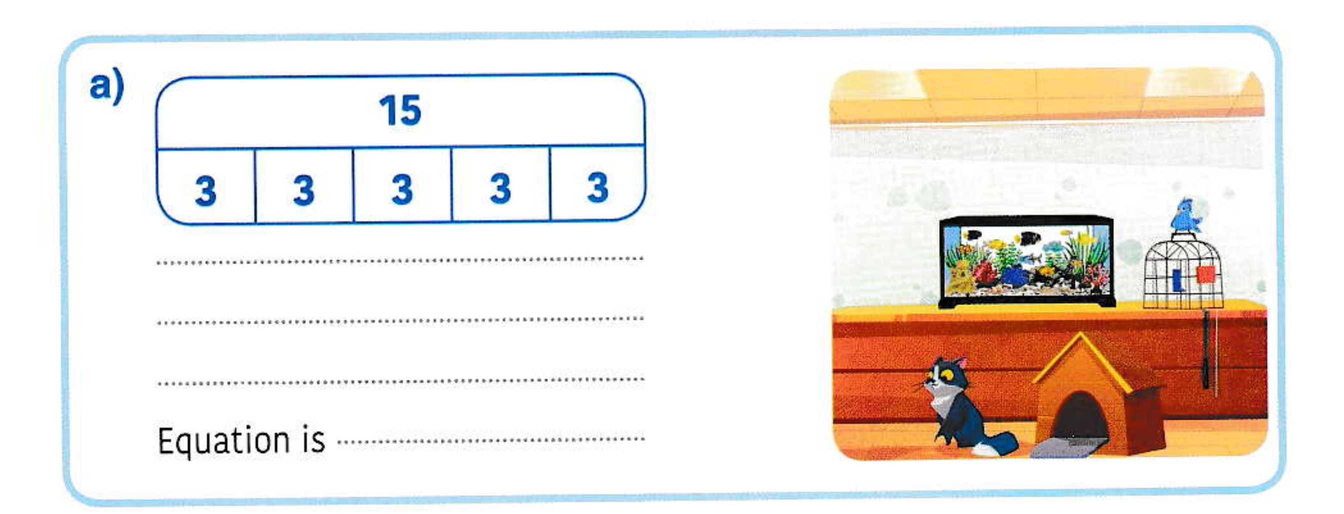
Form your own story problem to match the given bar models:



Soha baked 12 pancakes, she shared them equally among 6 of her friends.

How many pancakes does each friend will take?

Equation is $12 \div 6 = 2$ pancakes



....

....

....

Equation is ....

- Solving division story problems.
- Understanding the relation between fractions and division.

Grouping division problems

How can we find the number of groups using bar model?

Mazen is a scientist. He needs 27 hours to complete his experiment. If he works 9 hours a day, how many days will he need to finish his experiment?

Step 1:

Divide the bar model beginning with 9 which represents the number of working hours in each day.

9	

Step 2:

Keep dividing the bar model into groups of 9 till you complete 27 hours.

27		
9	9	9

WE NOTICE THAT:

to complete 27 hours we divide the bar model into 3 equal groups of 9.

$9 + 9 + 9 = 27$ $9 \times 3 = 27$

Equation is $27 \div 9 = 3$

So, he needs 3 days to complete his experiment.

Connect:

- Revise with your child solving error analysis problems involving division.

Activity 1 Read, then solve:

a) Mohab bought 12 candles and he wanted to share them equally among 3 of his friends. How many candles will each friend take?

12

Equation is: .... ÷ .... = ... candles

b) Salma reads 21 pages in 7 days. How many pages does she read in each day?

21

Equation is: .... ÷ .... = ... pages

c) Rahim has 36 toy cars. He wants to put them into groups of 4. How many groups will he have?

36

Equation is: .... ÷ .... = ... groups

Parents' Tips:

- Help your child to solve division story problems using bar models.

Form your own grouping story problem using bar models:

24			
6			

Talia studied 24 hours. If she studied for 6 hours each day. How many days did she study?

24			
6	6	6	6

Equation is: $24 \div 6 = 4$

-

18	
2	

....

....

....

....

Equation is: .... ÷ .... = ...

- Finding the number of groups of division problems using bar model.

Relation between multiplication and division

How are multiplication and division related?

Multiplication is joining equal groups to create a whole number

$3 \times 6 = 18$

$6 \times 3 = 18$

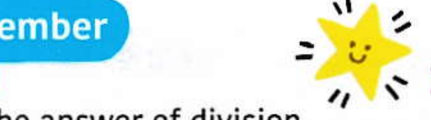
Division is separating a whole number into equal groups

$18 \div 3 = 6$

$18 \div 6 = 3$

Remember

- We can multiply both factors in any order and get the same product (commutative property).



- The answer of division problem is called the quotient.

Connect:

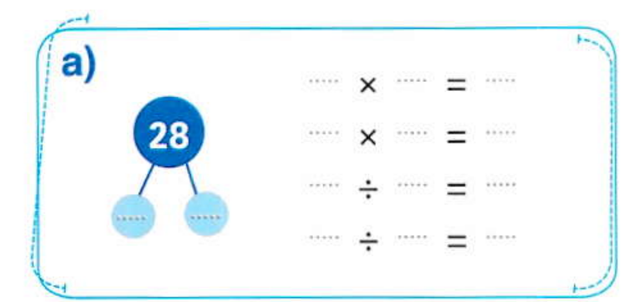
- Revise with your child the different ways of dividing a number such as 24 to its factors.

Activity 1 Find the missing factors, then write the equations:

Example

20 → 4, 5

$4 \times 5 = 20$
$5 \times 4 = 20$
$20 \div 5 = 4$
$20 \div 4 = 5$

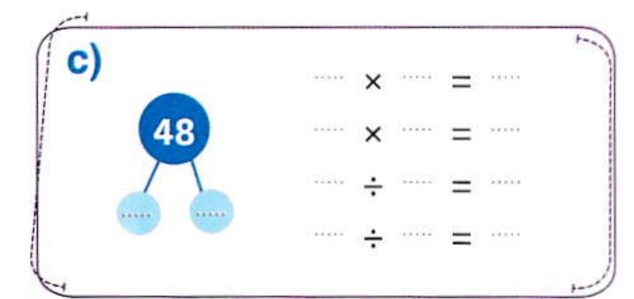


a) 28 → ...... , ...

...... × ...... = ...
...... × ...... = ...
...... ÷ ...... = ...
...... ÷ ...... = ...

b) 32 → ...... , ...

...... × ...... = ...
...... × ...... = ...
...... ÷ ...... = ...
...... ÷ ...... = ...



c) 48 → ...... , ...

...... × ...... = ...
...... × ...... = ...
...... ÷ ...... = ...
...... ÷ ...... = ...

Activity 2 Complete as the example:

Example

$6 \times 5 = 30$ means $30 \div 6 = 5$ and $30 \div 5 = 6$

a) $7 \times 9 = 63$ means .... and ....

b) $4 \times 8 = 32$ means .... and ....

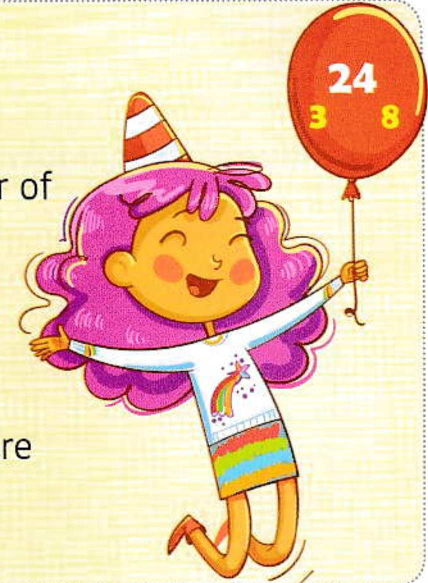
c) .... means $36 \div 9 = 4$ and ....

d) .... means .... and .... $\div 3 = 8$

Parents' Tips:
- Help your child to find the missing factors of the previous equations.

Use the given objects to form a division and multiplication story problem, then solve it:

Example



Multiplication problem:

Mariam has 3 packets of balloons each packet contains 8 balloons. Calculate the total number of balloons.

Equation is: $3 \times 8 = 24$ balloons.

Division problem:

Mariam has 24 balloons which are distributed equally among 8 packets. How many balloons are there in each packet?

Equation is: $24 \div 8 = 3$ balloons in each packet.

a) Multiplication problem:

....

....

Equation is: .... × .... = ...

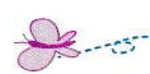
Division problem:

....

....

Equation is: .... ÷ .... = ...

- Finding the missing factors in a fact family.
- Writing multiplication and division equations to represent fact families.

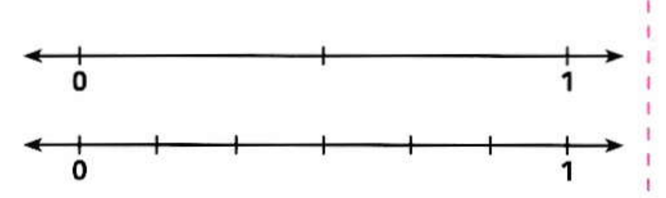


General Activities on Chapter 4

1 **Identify the equivalent fractions using the given models:**

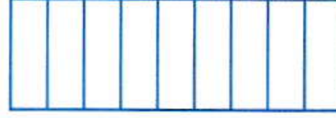
a) Using number line:

$\frac{1}{2} = \frac{\dots}{\dots}$



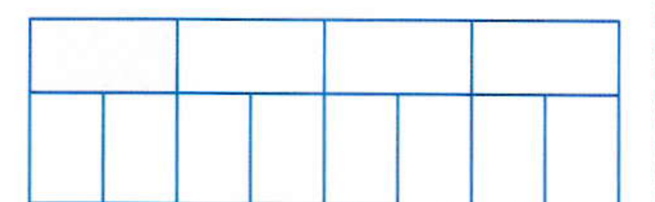
b) Using picture model:

$\frac{1}{3} = \frac{\dots}{\dots}$



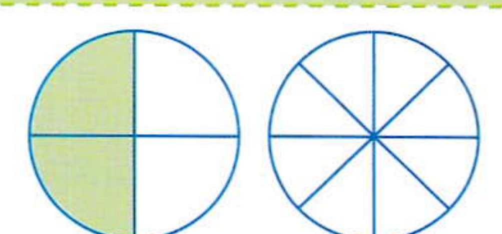
c) Using bar model:

$\frac{1}{4} = \frac{\dots}{\dots}$

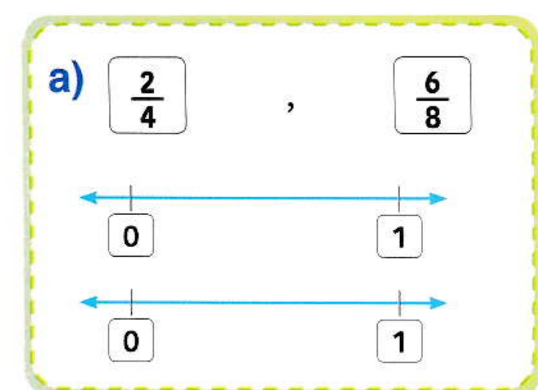


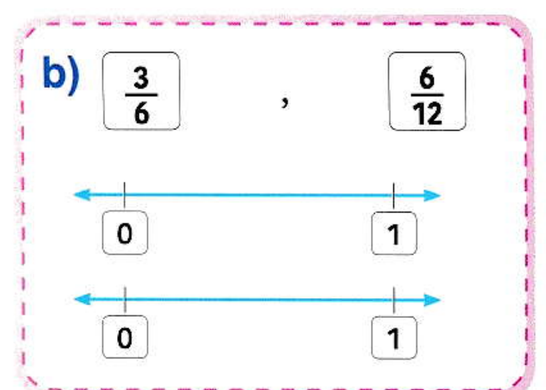
d) Using picture model:

$\frac{2}{4} = \frac{\dots}{\dots}$

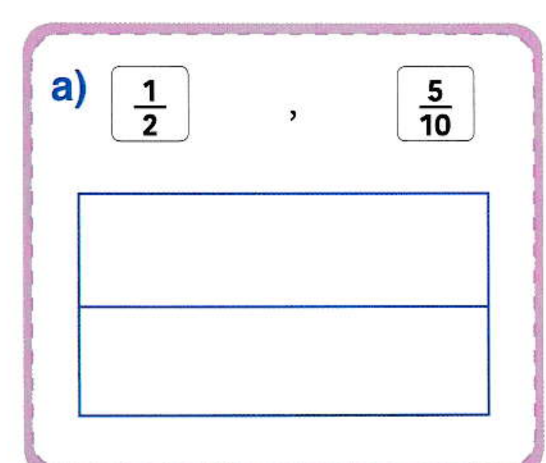


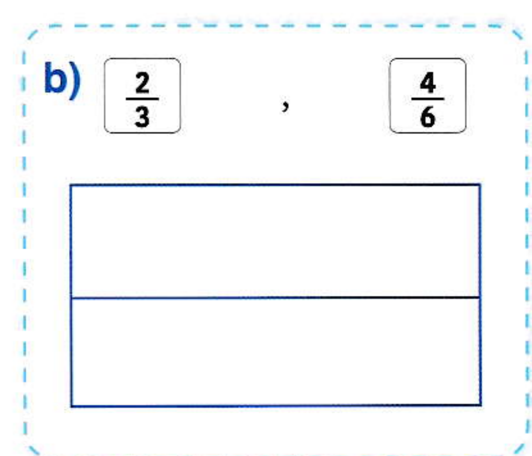
2 Represent the equivalent fractions using number line:



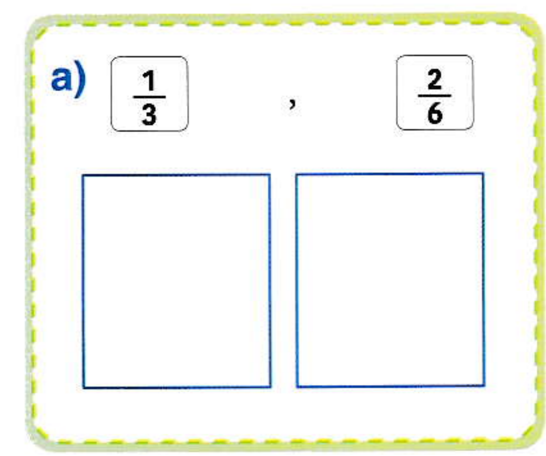


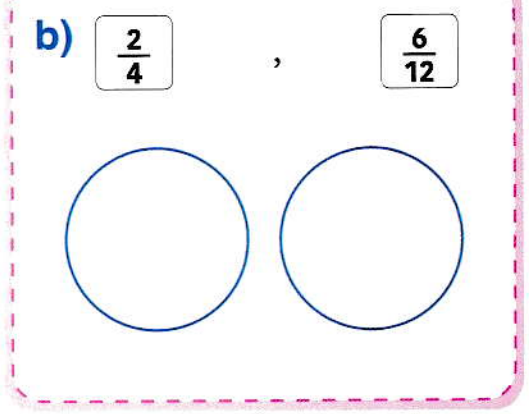
3 Represent the equivalent fractions using bar model:





4 Represent the equivalent fractions using picture model:





5 Complete:

$\frac{3}{5} = \frac{9}{\dots}$

$\frac{2}{7} = \frac{\dots}{14}$

$\frac{1}{3} = \frac{\dots}{30}$

$\frac{2}{6} = \frac{12}{\dots}$

$\frac{1}{7} = \frac{7}{\dots}$

$\frac{2}{4} = \frac{\dots}{12}$

6 Read, then solve:

Rahma and Amir have 2 sandwiches, Rahma ate $\frac{2}{4}$ of her sandwich, Amir wants to eat the same amount of his sandwich as Rahma, but his sandwich is cut into eight equal parts, find the equivalent fraction using the 3 models.

Bar model:	Picture model:
Number line model:	

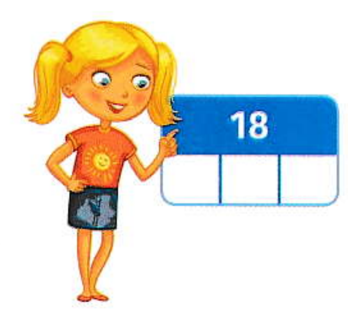
7 Complete:

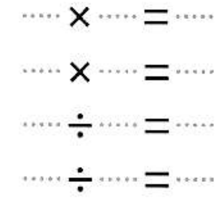
...... × ...... = ...

...... × ...... = ...

...... ÷ ...... = ...

...... ÷ ...... = ...





...... × ...... = ...

...... × ...... = ...

...... ÷ ...... = ...

...... ÷ ...... = ...

...... × ...... = ...

...... × ...... = ...

...... ÷ ...... = ...

...... ÷ ...... = ...

...... × ...... = ...

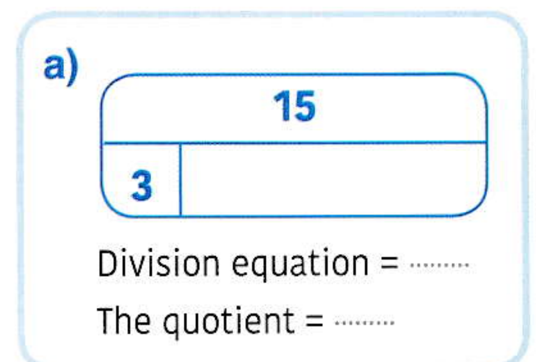
...... × ...... = ...

...... ÷ ...... = ...

...... ÷ ...... = ...

8 Complete:

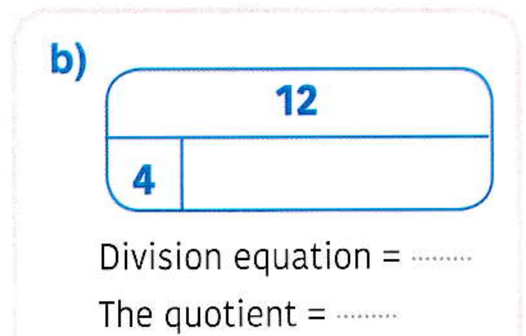
a)



Division equation = ...

The quotient = ...

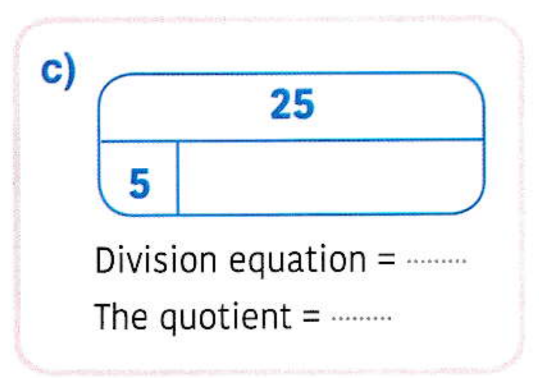
b)



Division equation = ...

The quotient = ...

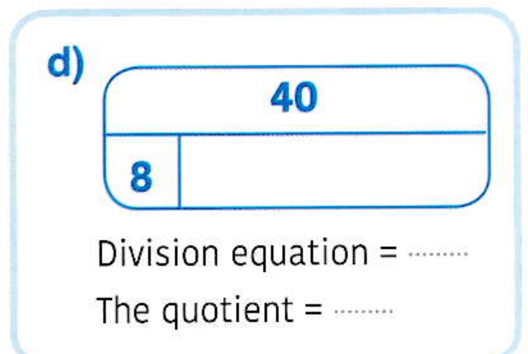
c)



Division equation = ...

The quotient = ...

d)



Division equation = ...

The quotient = ...

Correct the wrong answer:

a)

7 m

2 m | | 2 m

7 m

Area = 49 square meters

Perimeter = 18 meters

The correct answer is:

....

....

b) The following shape is a quadrilateral

Square

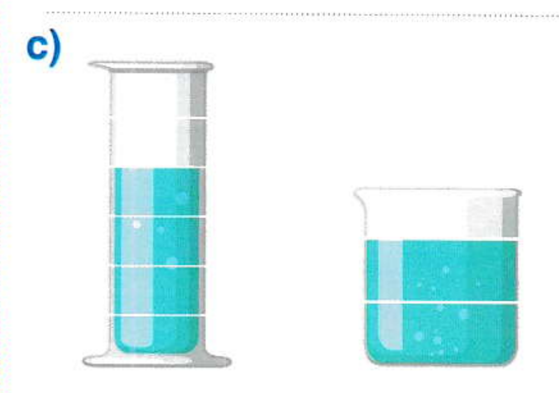
- has only 2 equal sides
- has 4 same vertices
- has only 2 parallel sides

The correct answer is:

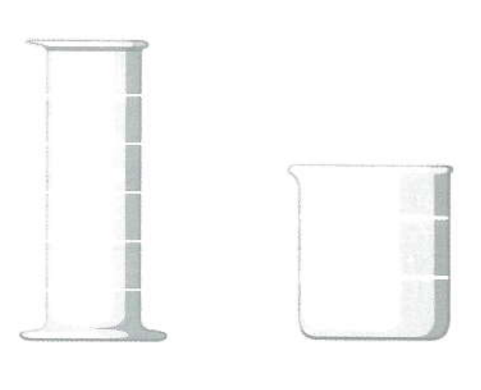
....

....

c)

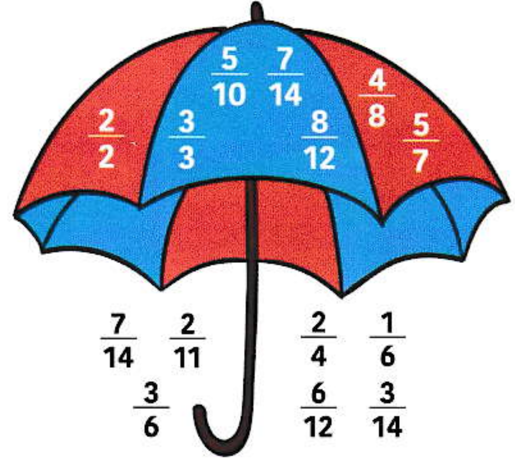


$\frac{2}{6}$ L = $\frac{2}{3}$ L



$\frac{\cdots}{\cdots}$ L = $\frac{\cdots}{\cdots}$ L

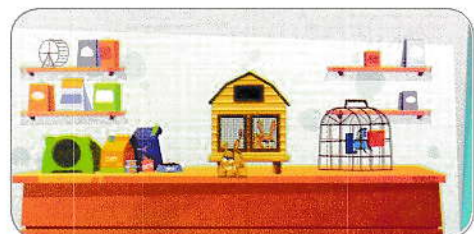
1 **Circle all the fractions that are equivalent to one half:**



2 **Read and solve:**

The pet shop has 12 animals $\frac{1}{4}$ of them are rabbits. How many rabbits are there?

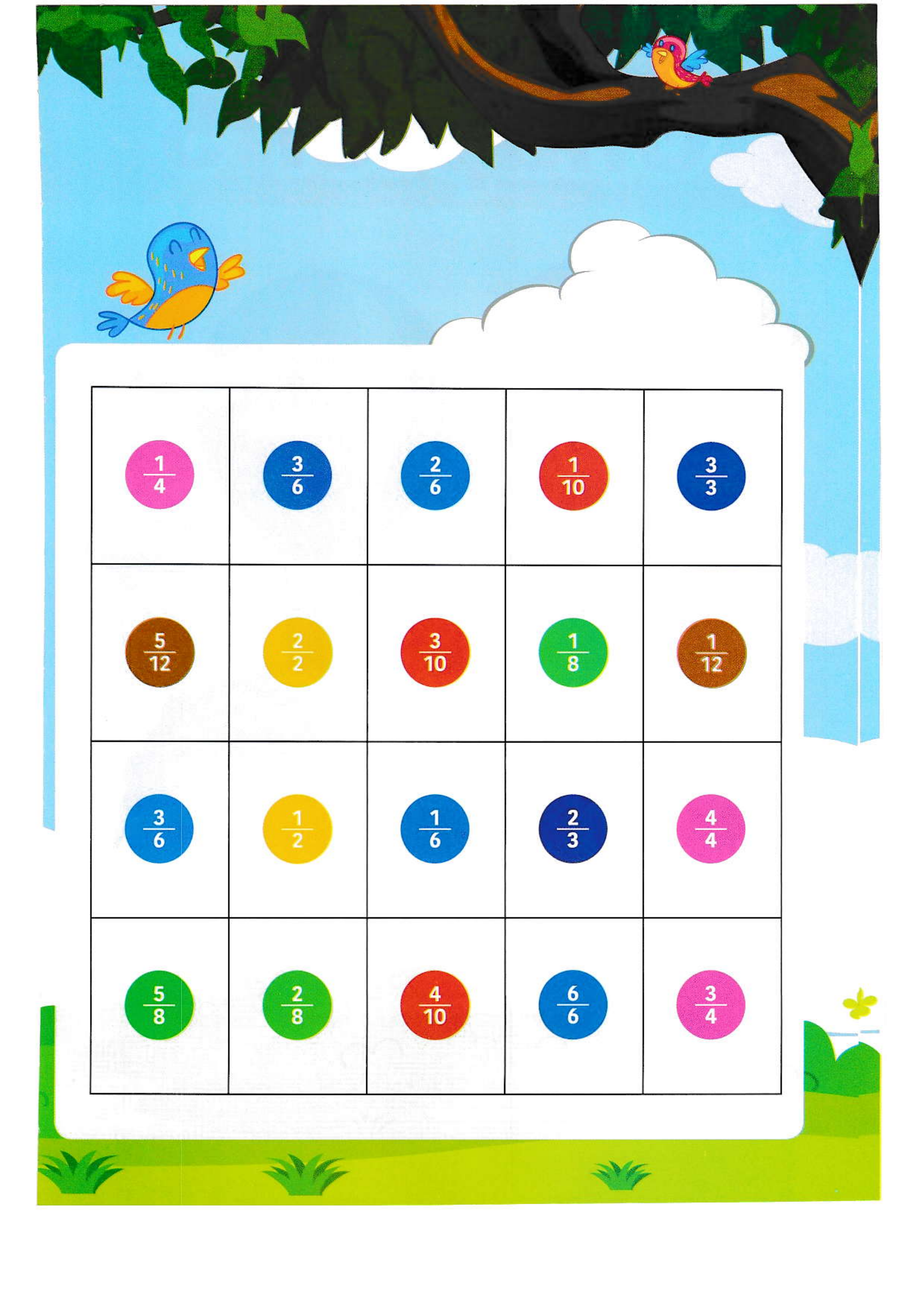
12



3 **Prove your equivalent fraction using 3 models:**

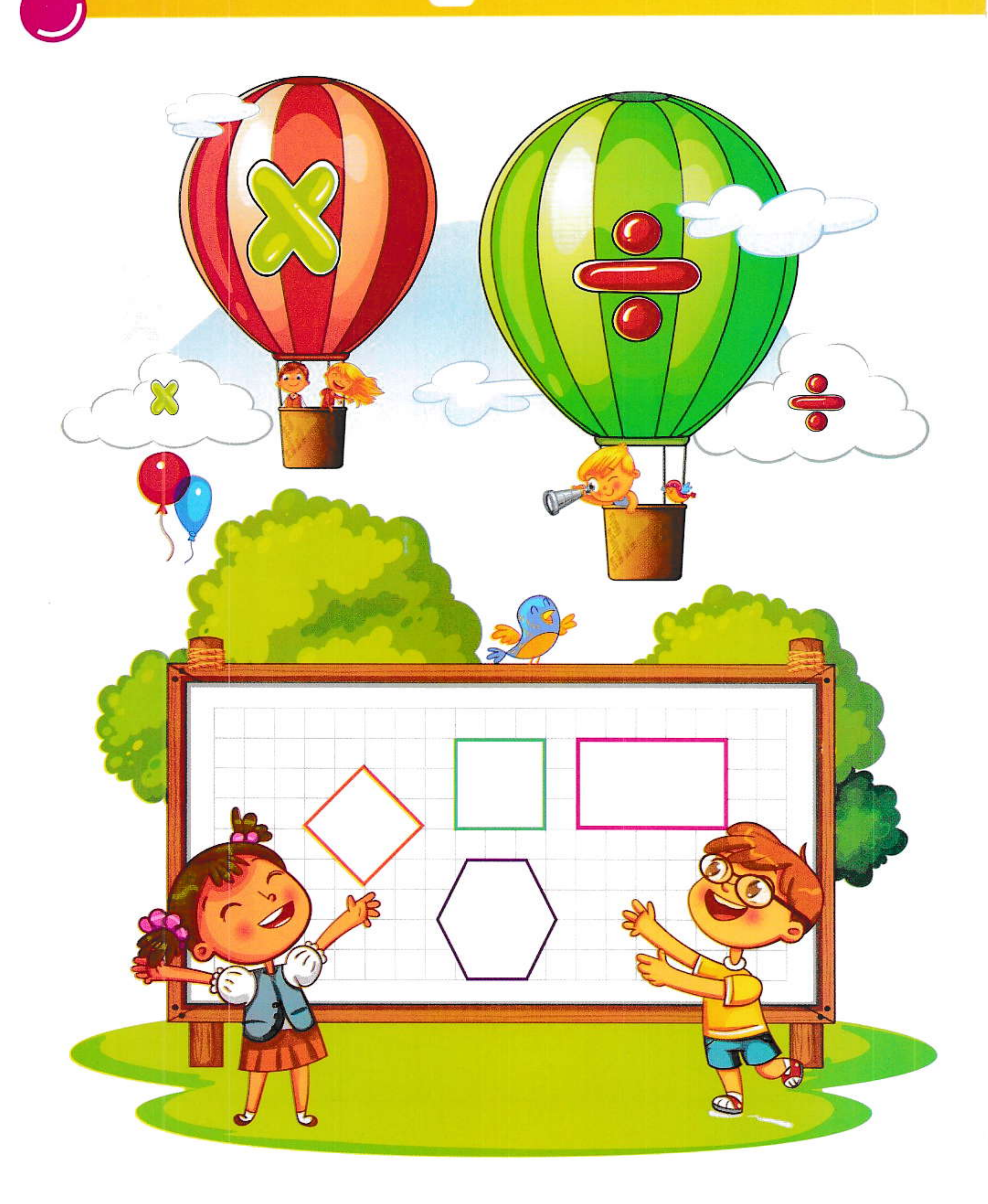
$\frac{2}{4} = \frac{\dots}{8}$	
Bar model:	**Picture model:**
Number line:	

Color each figure as its equal fraction in the opposite page:



1/4
3/6
2/6
1/10
3/3
5/12
2/2
3/10
1/8
1/12
3/6
1/2
1/6
2/3
4/4
5/8
2/8
4/10
6/6
3/4

Chapter 5

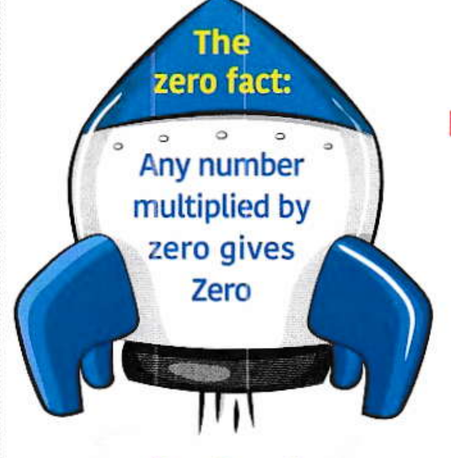


Pacing Guide

Lesson	Instructional Focus	Key vocabulary
Lesson 101	**Multiplication facts** • Develop fluency in multiplying one-digit numbers. • Identify strategies to help them remember multiplication facts.	• Fluency
Lessons 102& 103	**Using the relation between multiplication and division in real life** • Investigate relationships between numbers in multiplication and division fact families. • Write equations to represent multiplication and division relationships within a fact family. • Explain how they can use the relationship between multiplication and division fact families to master math facts. • Use a symbol to represent an unknown number in an equation. • Write equations with one unknown number to represent story problems. • Solve equations with one unknown.	• Dividend • Divisor • Factor • Fact family • Product • Quotient
Lessons 104 & 105	**Forming multiplication and division story problems** • Write story problems that represent given equations for multiplication . • Apply strategies to solve multiplication story problems. • Write story problems that represent given equations for division. • Apply strategies to solve division story problems. • Define division.	• Equation • Symbol • Unknown • Product • Division
Lesson 106	**Calculating area and perimeter of some shapes** • Find the area and perimeter of quadrilaterals. • Find the perimeter of shapes that are not quadrilaterals. • Collaborate to write class definitions for area and perimeter.	• Area • Perimeter • Square units
Lesson 107	**The area of complex shapes** • Calculate the area of a shape when given the perimeter. • Determine the missing side lengths of complex shapes when given the perimeter. • Determine the missing side lengths of complex shapes to determine the perimeter. • Decompose complex shapes into smaller quadrilaterals to determine the area.	• Complex shapes • Perimeter • Area
Lessons 108 & 109 &110	**Some applications on the perimeter and area of the rectangle and square** • Determine the perimeter of a rectangle when given the area and one dimension. • Complete a house design project to demonstrate understanding of area and perimeter.	• Factor pairs • Dimensions

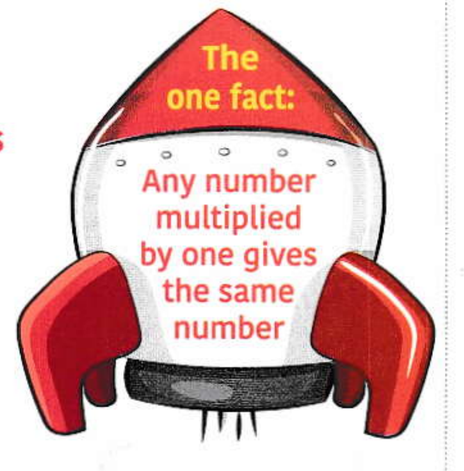
Multiplication facts

How can we use different multiplication facts in solving multiplication equations?

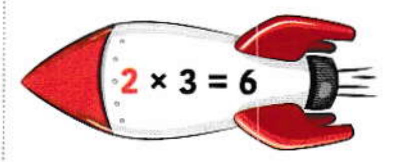


$7 \times 0 = 0$

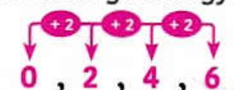
Multiplication facts from zero to 4



$8 \times 1 = 8$



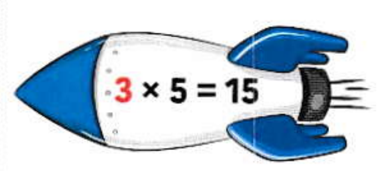
Skip counting strategy by 2:



0 , 2 , 4 , 6

Double strategy:

$3 + 3 = 6$



Double, then add one more group fact: 3×5 (2, 1)

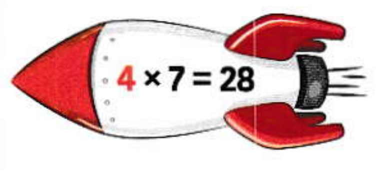
Double: $2 \times 5 = 10$

then add one group of 5

$10 + 5 = 15$

Repeated addition strategy:

$3 + 3 + 3 + 3 + 3 = 15$



Break apart strategy:

4×7 (4, 3)

Then use distributive property

$(4 \times 4) + (4 \times 3) = 28$

Double the double fact:

$2 \times 2 = 4$

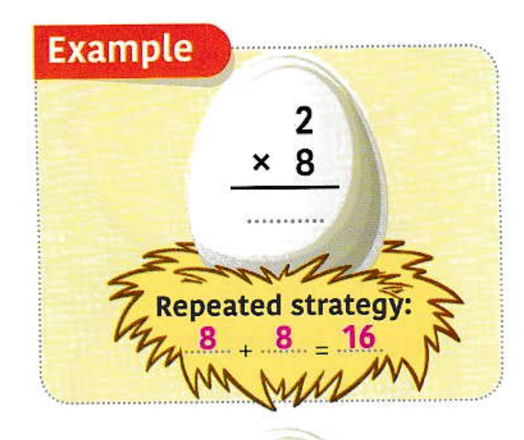
$2 \times 7 = 14$, $2 \times 7 = 14$

$14 + 14 = 28$

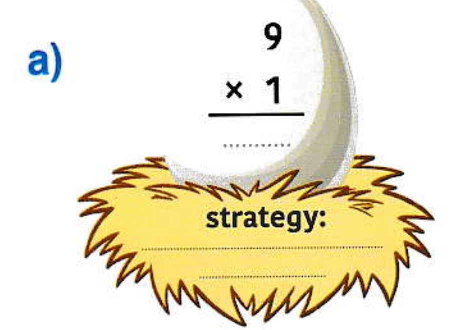
Connect:

- Revise with your child the units that are used in measuring lengths as (cm, m and mm) and solve 2-step story problems involving measurement of length.

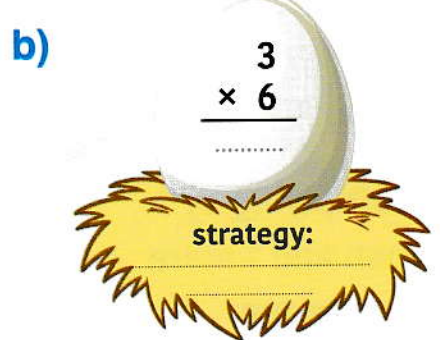
Find the product, then write down the multiplication fact you have used:



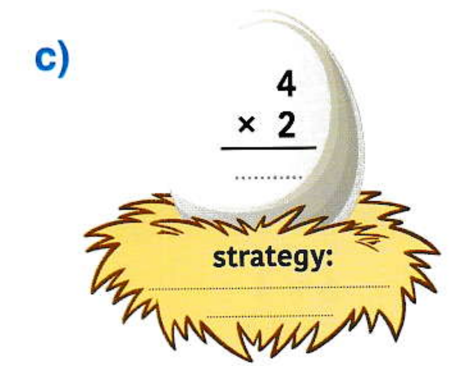
a)



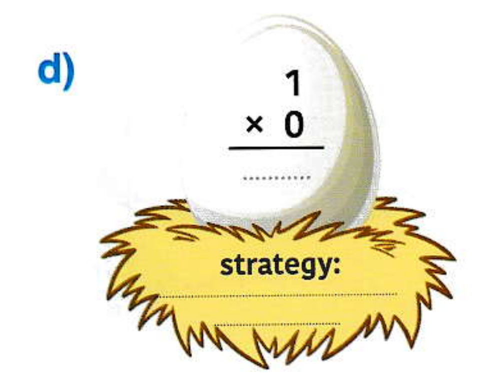
b)



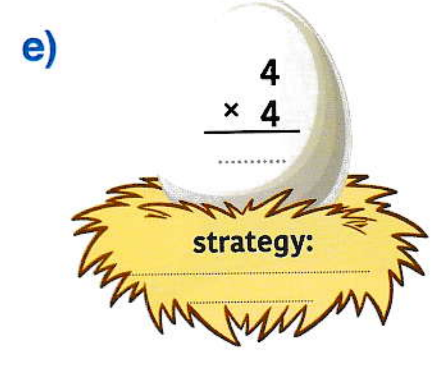
c)



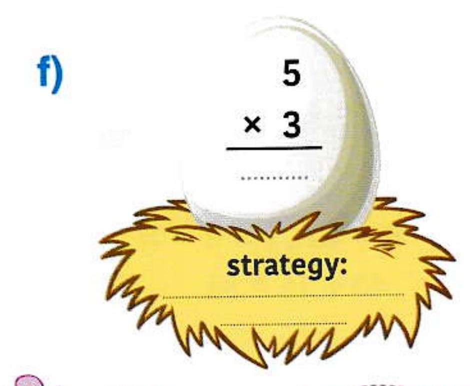
d)



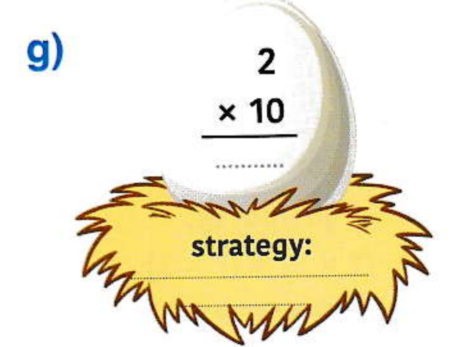
e)



f)



g)

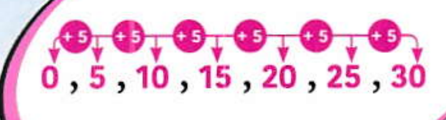


Parents' Tips:

- Help your child to find the product of each of the examples above using 2 different strategies.

Multiplication facts from 5 to 7

Skip counting by 5 strategy:



$5 \times 6 = 30$

Multiplying by 10 fact:

$\underset{5\quad 5}{10} \times 6 = \underset{30\quad 30}{60}$

Since 5 is half 10
So, $5 \times 6 = 30$

Break apart strategy:

$6 \times \underset{2\quad 2}{4}$

Then use distributive property:
$(6 \times 2) + (6 \times 2)$
$12 + 12 = 24$

$6 \times 4 = 24$

Multiplying by 5, then add 1 more group:

$\underset{5\quad 1}{6} \times 4$

$5 \times 4 = 20$, $1 \times 4 = 4$
$20 + 4 = 24$

Break apart strategy:

$7 \times \underset{5\quad 3}{8}$

Then use distributive property:
$(7 \times 5) + (7 \times 3)$
$35 + 21 = 56$

$7 \times 8 = 56$

Multiplying by 5, then add 2 more groups:

$\underset{5\quad 2}{7} \times 8$

$5 \times 8 = 40$, $2 \times 8 = 16$
$40 + 16 = 56$

Parents' Tips:

- Encourage your child to choose one of the strategies.

Activity 2 Correct the errors:

a) $4 \times 6 = 20$

ERROR:

....

b) $5 \times 8 = 48$

ERROR:

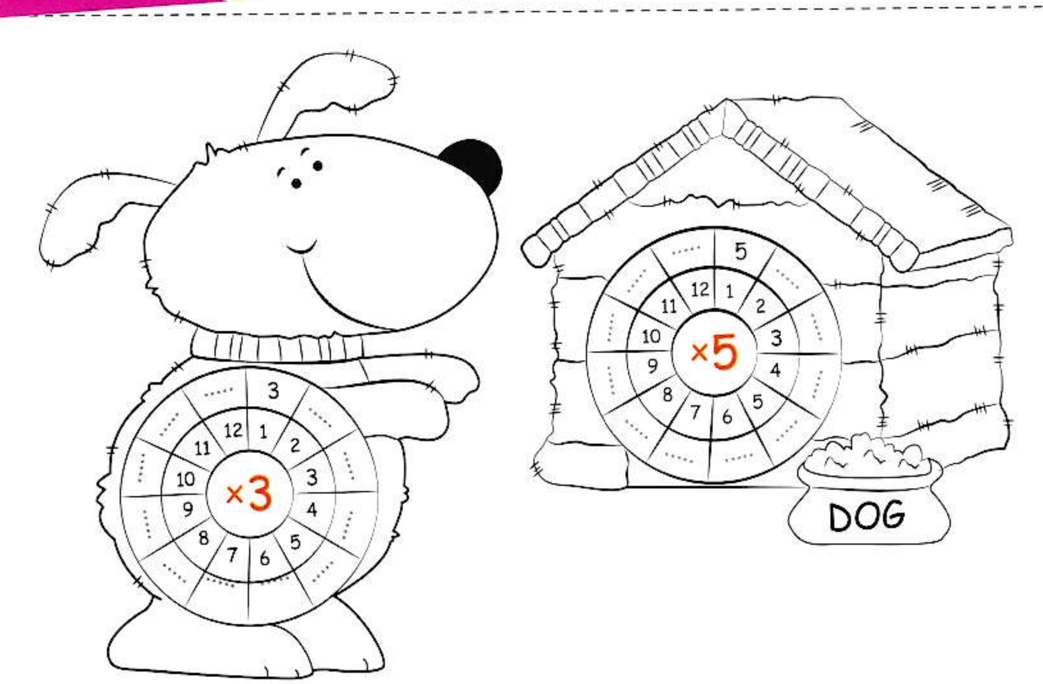
....

c) $3 \times 7 = 18$

ERROR:

....

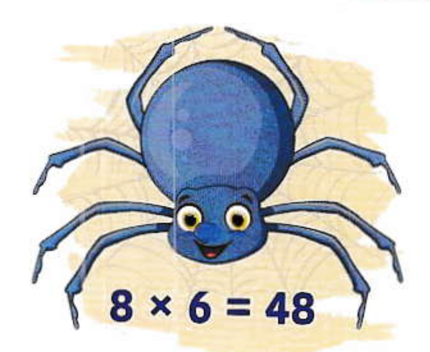
Activity 3 Find the product, then color:



Parents' Tips:

- Practice with your child solving the examples above using his/her favorite strategies.

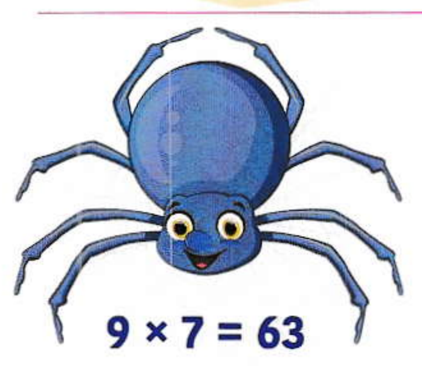
Multiplication facts from 8 to 10



Doubles the 4's fact:

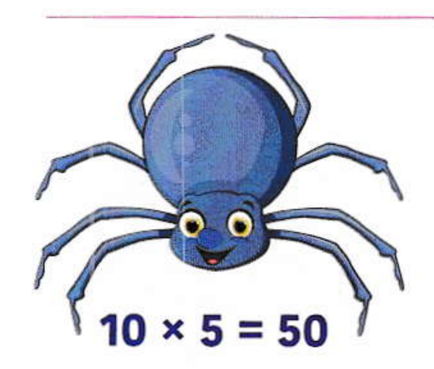
8 × 6
4 4

(4 × 6) + (4 × 6)
24 + 24 = 48



Finger trick strategy:

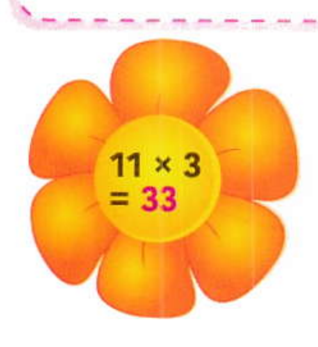
6 fingers before → 60
3 fingers after → 3
60 + 3 = 63



Add zero fact:

10 × 5 = 50

Skip counting by 10:
0 , 10 , 20 , 30 , 40 , 50

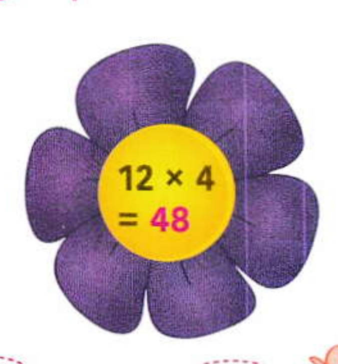


Multiply by 10, then add 1 more group:

10 × 3 = 30 , 1 × 3 = 3
30 + 3 = 33

Tens facts and 2's facts:

(10 × 4) + (2 × 4)
40 + 8 = 48



Parents' Tips:

- Encourage your child to use different strategies of multiplication.

Activity 4 Solve, then match with the suitable multiplication fact:

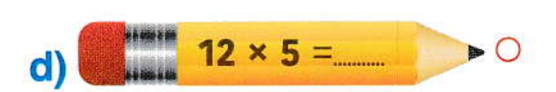
Example

11 × 4 = 44

a) 5 × 6 = ...

b) 9 × 8 = ...

c) 6 × 7 = ...



d)

- ...... fingers before the bended finger
  ...... fingers after the bended finger
  .... + ... = 72

- Multiply by 10, then add 1 group
  (10 × 4) = 40
  40 + 4 = 44

- Tens facts and 2's facts:
  (...... × ......) + (...... × ......)
  ...... + ... = ...

- Skip counting by ....
  ...... , ... , ... , ... , ... , 30

- Multiply by ...... , then add ...... group
  (...... × ......) = 35
  35 + ... = 42

Parents' Tips:

- Help your child to choose the suitable strategy to solve the multiplication equation above.

How can we find the factors of a number?

$1 \times 12 = 12$

$2 \times 6 = 12$

$3 \times 4 = 12$

So the factors of 12 are 1 , 12 , 2 , 6 , 3 and 4

$1 \times 9 = 9$

$3 \times 3 = 9$

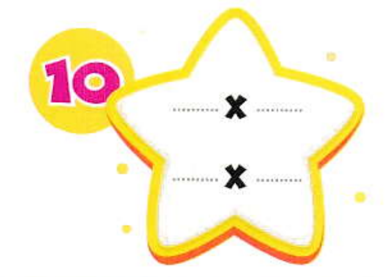
So the factors of 9 are 1 , 3 and 9 without repeating the factors

The factors of a number are all the possible numbers which that number is divisible by each one of them **without remainder.**

- 1 is a common factor for all numbers.

Activity 5 Find the factors of the given numbers:

Factors of 8 are .... , ... , ... , ...



Factors of 10 are .... , ... , ... , ...

Factors of 14 are .... , ... , ... , ...

Factors of 18 are ...... , ... , ... , ... , ... , ...

Parents' Tips:

- Explain to your child that number 1 is a common factor for all numbers.

Activity 6 Match:

a)
- I am a number with 6 different factors.
- I have 1 in my tens place.

b)
- I have zero in the ones place.
- One of my factors is four.
- I am double 10

c)
- I am number with 4 different factors.
- I have 5 in my ones place.

d)
- I have 8 different factors.
- If you double the number in my tens place you get the number in my ones place.

I learned

- Developing fluency in multiplying one-digit numbers
- Identifying strategies to help me remember multiplication facts.

Using the relation between multiplication and division in real life

How can we use the relation between multiplication and division in real life?

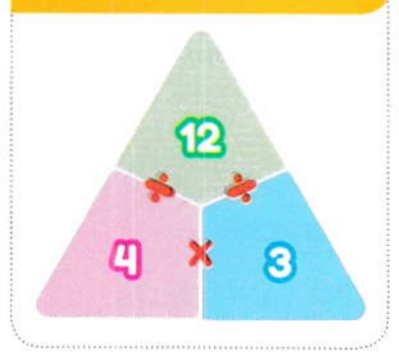
There are 12 bananas on a tree. If we divide them equally among 4 monkeys, how many bananas will each monkey take?

Dividend
the number we need to share equally

Divisor
the number that we divided by

Quotient
the equal share of each number (answer of division)

Fact family triangle:



We can also find the solution using multiplication equation

$4 \times 3 = 12$

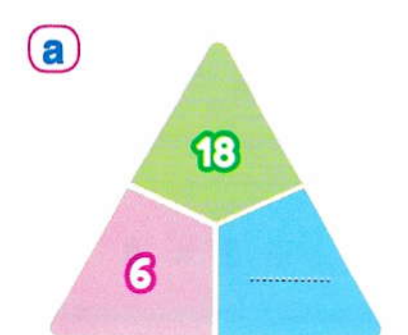
$3 \times 4 = 12$

Connect:

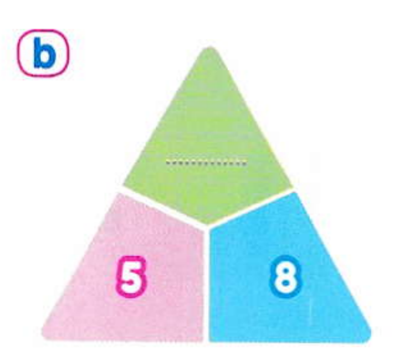
- Revise with your child solving multiplication equations using repeated addition.

Activity 1 Complete:

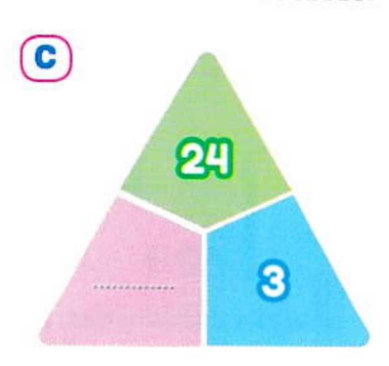
a



b



c



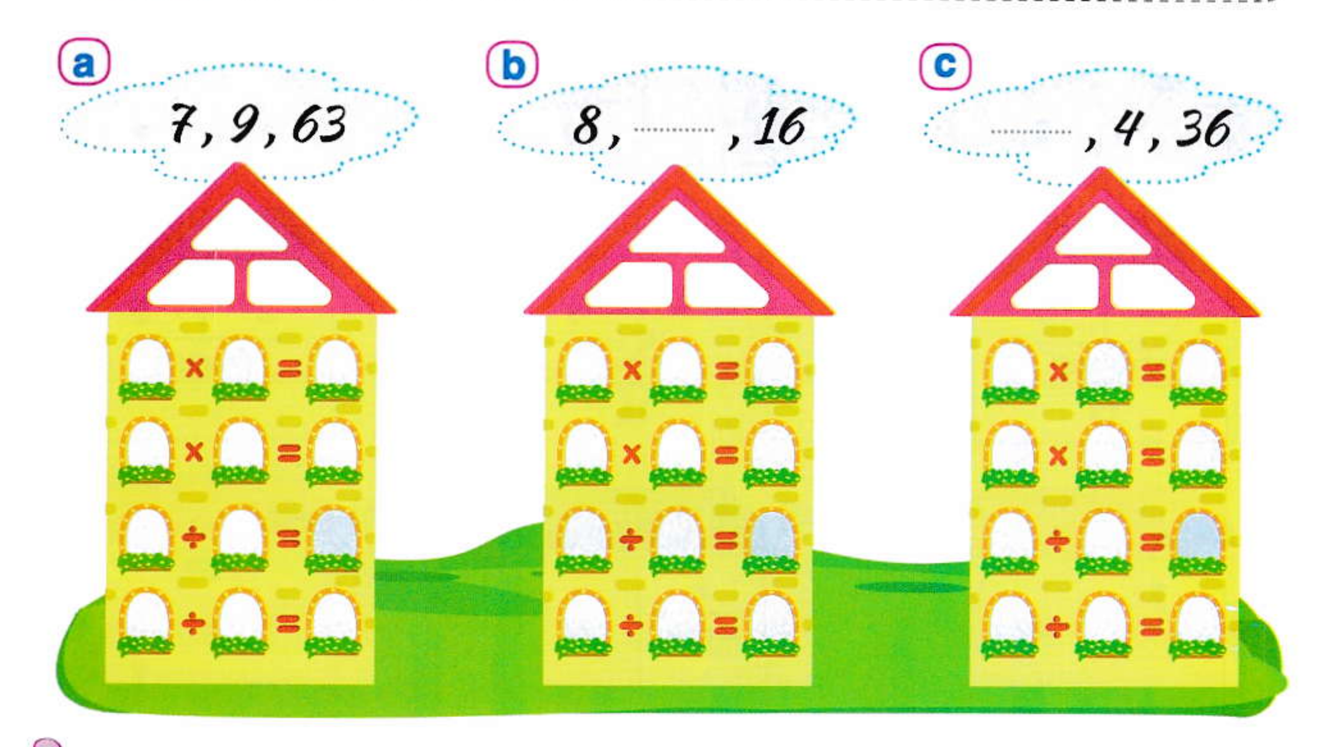
a	b	c
.... × .... = ...	.... × .... = ...	.... × .... = ...
.... × .... = ...	.... × .... = ...	.... × .... = ...
.... ÷ .... = ...	.... ÷ .... = ...	.... ÷ .... = ...
.... ÷ .... = ...	.... ÷ .... = ...	.... ÷ .... = ...

Activity 2 Use the given numbers to form a fact family:

a 7, 9, 63

b 8, ..., 16

c ...., 4, 36



Parents' Tips:

- Help your child to complete the fact families above.

Activity 3 Find the missing number:

a) 5 × .... = 45

b) .... × 6 = 42

c) 10 ÷ .... = 2

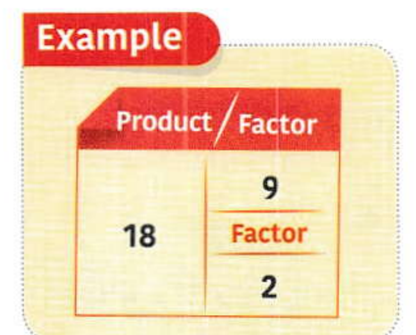
d) .... ÷ 3 = 4

e) 9 × .... = 18

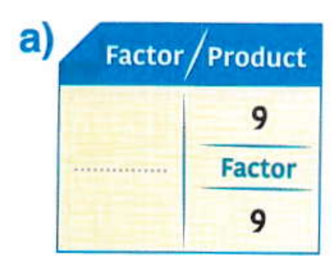
f) .... × 10 = 40

Activity 4 Complete the missing:

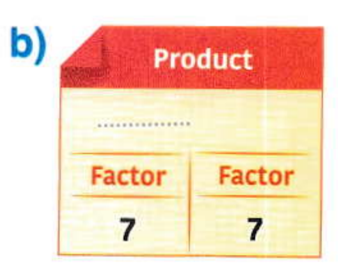
Example



a)



b)



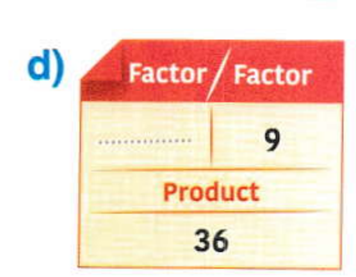
c) Factor / Factor

.... | 3

Product

12

d)



e) Factor / Factor

8 | 5

Product

....

f) Product / Factor

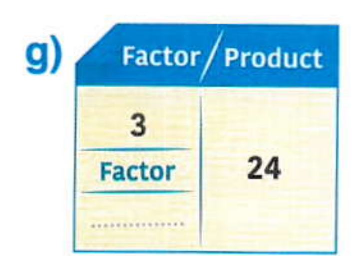
6

Factor

....

42

g)



h) Product

63

Factor | Factor

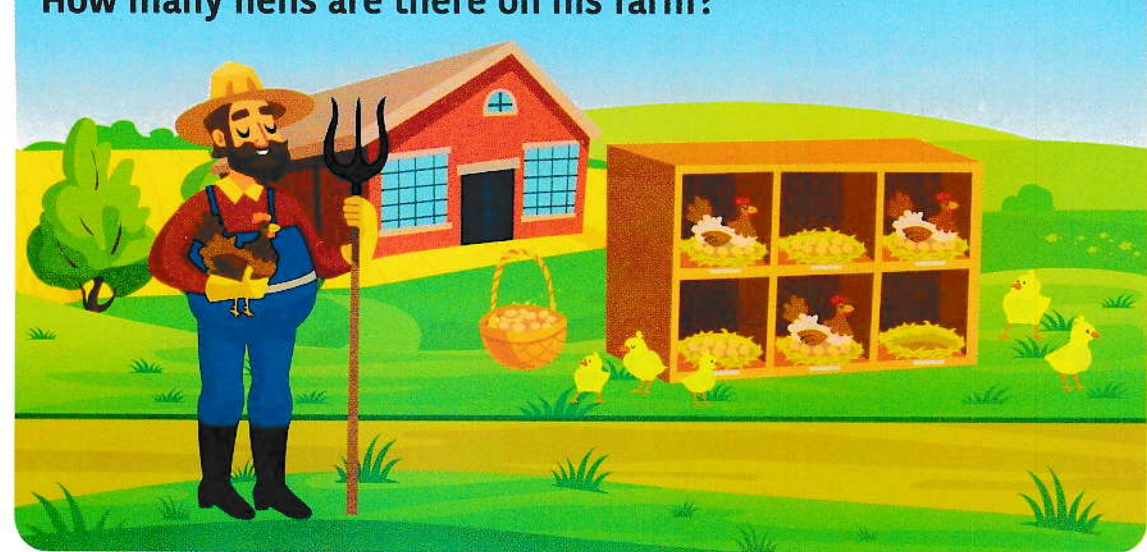
.... | 7

Parents' Tips:

- Encourage your child to find the missing factor or the missing product.

How can we solve division problems with unknown number?

A farmer collected 72 eggs in case each hen lays 9 eggs. How many hens are there on his farm?



- There are 72 eggs ⟶ (Dividend)
- Each hen lays 9 eggs ⟶ (Divisor)

We can find the number of hens using different equations:

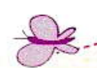
- $72 \div 8 = 9$
- $72 \div 9 = 8$
- $8 \times 9 = 72$
- $9 \times 8 = 72$

There are 8 hens

WE USE

The relation between multiplication and division helps us find a missing (unknown) term.

- We can use symbols as ▇ to refer to the missing number (unknown).



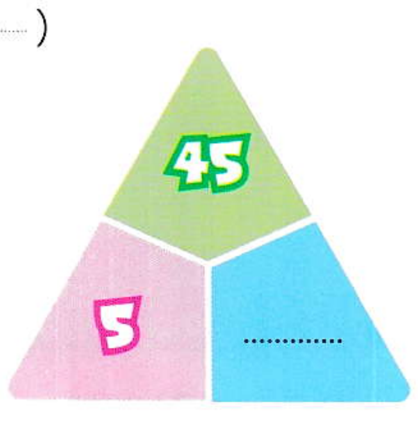
Parents' Tips:

- Help your child to solve multiplication and division story problems using fact family.

Activity 5 Read, then solve:

a) In a school 45 students are going on a field trip to the museum and they will travel by cars. If each car holds 5 students only, how many cars will be needed?

- There are .... students → (........)
- Each car holds .... students → (........)

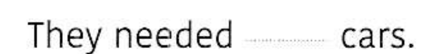


.... × .... = ...

.... × .... = ...

.... ÷ .... = ...

.... ÷ .... = ...



They needed .... cars.

b) Ahmed used 21 meters of fabric to make 7 large Egyptian flags. How many meters of fabric did he use for each flag?

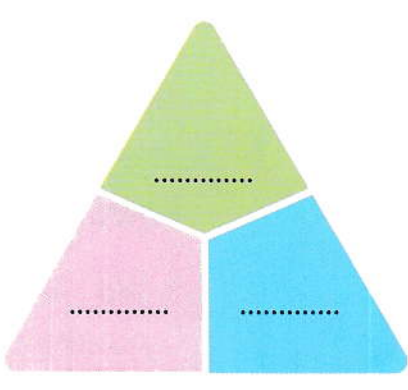
- .... → (........)
- .... → (........)

.... × .... = ...

.... × .... = ...

.... ÷ .... = ...

.... ÷ .... = ...



He used .... meters of fabric.

Parents' Tips:
- Help your child to read and solve story problems using the fact family.

c) Sherif wants to fix some toy cars.

If he has 48 wheels,

how many toy cars will he fix?

- .... → (..........)
- .... → (..........)
- .... → (..........)
- He can fix .... cars.

d) A farmer had 48 apples. He wants to pack them into baskets of six.

How many baskets does he need?

- .... → (..........)
- .... → (..........)
- .... → (..........)
- The number of baskets he needs = ... baskets.

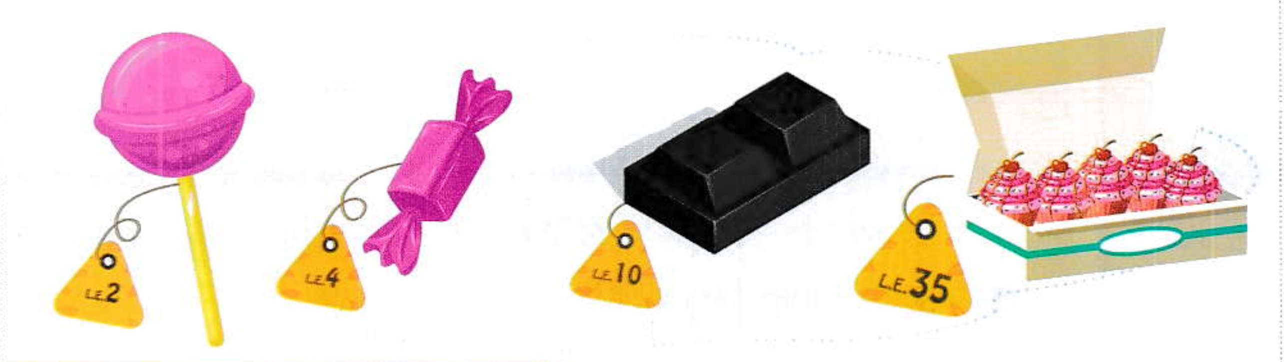
I learned

- Finding the relation between numbers in multiplication and division fact families.
- Writing equations to represent multiplication and division relationships.
- Solving equations with one unknown term.

Forming multiplication and division story problems

How can we form a multiplication and division story problem?

1 lollipop 20 gums 1 chocolate bar 5 cupcakes



Multiplication story problem:

Selim wants to buy 4 chocolate bars. If one chocolate bar costs L.E. 10.

How much money will he pay?

He will pay: $4 \times 10 =$ L.E. 40

Division story problem:

Noha went to the store to buy one cupcake. If the price of 5 cupcakes is L.E. 35.

What is the price of one cupcake?

The price of one cupcake = $35 \div 5 =$ L.E. 7

Note

- **Multiplication** helps us to do quick counts around us in the real life.
- **Division** helps us to decide how to share or break up large numbers into equal parts around us in the real life.

Connect:

- Revise with your child solving fact family equations with missing factors and playing division games.

Activity 1 Match each story problem to its equation:

a) There are 10 apples in each basket. How many apples are there in 6 baskets?

$24 \div 2 =$ ....
$2 \times$ .... $= 24$

b) There are 49 bananas to be divided equally among 7 children. How many bananas will each child have?

$10 \times 6 =$ ....
.... $\div 6 = 10$

c) There are 45 marbles in a jar. We need to share them equally among 9 children. How many marbles will each child take?

$49 \div 7 =$ ....
$7 \times$ .... $= 49$

d) Hala had 24 roses, she distributed them equally between 2 vases. Find the number of roses in each vase.

$45 \div 9 =$ ....
$9 \times$ .... $= 45$

Parents' Tips:

- Help your child to read each problem carefully to find the related equations.

Activity 2 Use the given equations to form a story problem:

7×6

a)

- **Multiplication story problem:**

....

....

- **The result:**

....

....

$27 \div 3$

b)

- **Division story problem:**

....

....

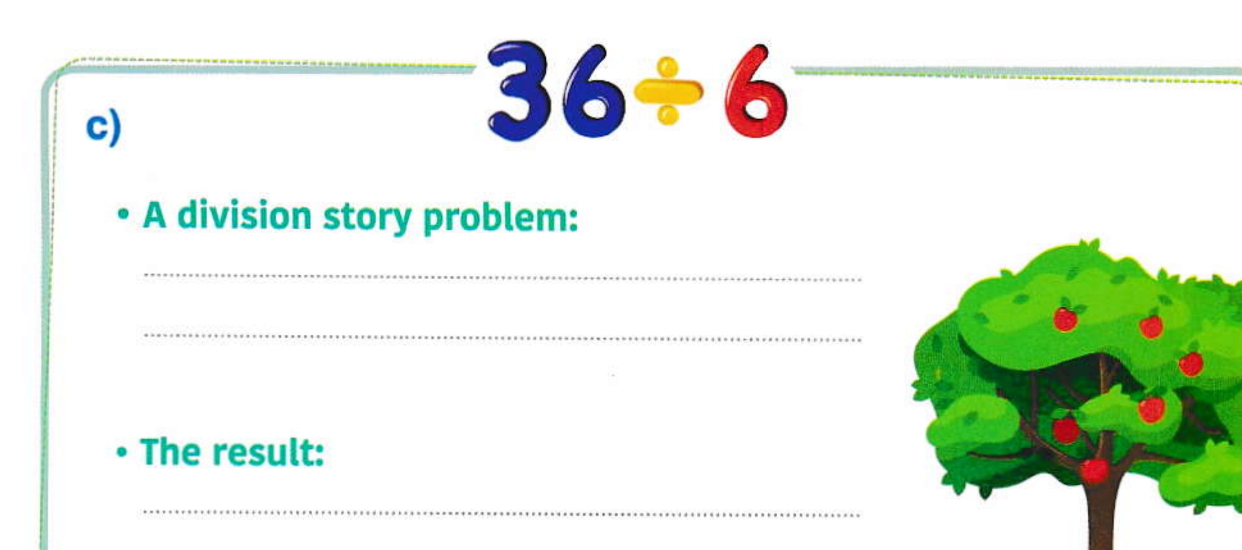
- **The result:**

....

....

Parents' Tips:

- Help your child to form story problems about the given multiplication or division equations.



c) $36 \div 6$

- **A division story problem:**

....

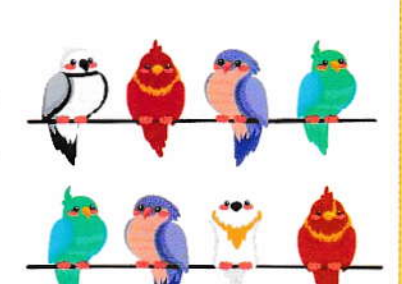
....

- **The result:**

....

....

d) 8×8



- **A multiplication story problem:**

....

....

- **The result:**

....

....

I learned

- Defining division.
- Writing story problems to represent a given multiplication and division equation.
- Applying different strategies to solve multiplication and division story problems.

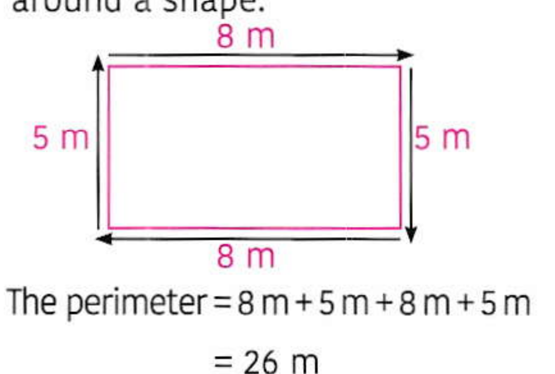
Calculating area and perimeter of some shapes

How can we calculate the area and the perimeter of any shape?

Mrs Alia asked Jana to calculate the area and the perimeter of her rectangular shape swimming pool whose length is 8 m and width is 5 m.

Perimeter:

Is the sum of the outside distance around a shape.



The perimeter = 8 m + 5 m + 8 m + 5 m

= 26 m

Area:

Is the number of square units inside a shape.

8 m

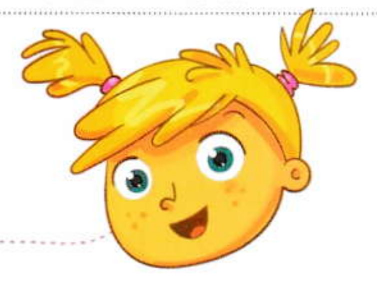
5 m

Area of rectangle

= length × width

= 8 m × 5 m = 40 m^2

- The unit used to represent perimeter is (cm or m).
- The unit used to represent the area is (cm^2 or m^2).



Connect:

- Review with your child solving 2-steps story problems involving mass, addition and subtraction.

Activity 1 Read, then solve:

Example

A square-shaped room of side length 6 m, find the perimeter and the area of this room.

Perimeter = side length × 4

= 6 × 4 = 24 m

Area = side length × side length

= 6 × 6 = 36 m²

a) Adham has a rectangular garden with length of 10 meters and width of 6 meters. Find the perimeter and the area of this garden.

Perimeter = (............ + ...) × 2

= .... × ....

= .... m

Area = ... × ....

= .... × ....

= .... m²

Parents' Tips:

- Encourage your child solving story problems related to perimeter and area.

b) Adam made his birthday party in a squared shape garden of side length 10 meters. Find the area and the perimeter of this garden.

Perimeter = ...

= ....

= ....

Area = ...

= ....

= ....

c) Mr Akram hires a landscape architect to design his front yard. The rectangular yard is of measures 7 meters and 4 meters.

Find the area and the perimeter of Mr Akram's front yard.

Perimeter = ...

= ....

= ....

Area = ...

= ....

= ....

Parents' Tips:

- Let your child write the rules of perimeter and area of both square and rectangle.

Activity 2 Read, then draw to solve:

Example

Laila draws a rectangle with a length of 6 cm and a width of 3 cm.
Nour draws another rectangle with length of 5 cm and a width of 3 cm.
Draw the 2 rectangles side by side as one rectangle, then find the perimeter and the area of that rectangle.

6 cm	5 cm
3 cm — Laila's rectangle	Nour's rectangle — 3 cm
6 cm	5 cm

The perimeter:
Think of the 2 rectangles as 1 rectangle.
Perimeter = 3 + 11 + 3 + 11 = 28 cm

The area:
Think of the 2 rectangles as 1 rectangle.
Area = 11 × 3 = 33 cm^2

a) Draw three rectangles next to each other to make 1 large rectangle. Each rectangle is 4 cm long and 2 cm wide, then find the perimeter and the area of the large rectangle.

The perimeter:
= .... + ... + ... + ... = ...

The area:
= .... × .... = ...

Parents' Tips:
- Help your child to draw the required rectangle using his/her pencil.

b) Draw two rectangles side by side as 1 large rectangle. The first will be 6 cm long and 2 cm wide, the second will be 3 cm long and 2 cm wide, then find the perimeter and the area of this large rectangle.

- Perimeter = ... Area = ...

c) Draw three rectangles next to each other to make 1 large rectangle. Each rectangle will be 5 cm as length and 4 cm as width, then find the perimeter and the area of the large rectangle.

- Perimeter = ... Area = ...

Parents' Tips:

- Encourage your child to draw more than one rectangle to form one large rectangle, then calculate its area and perimeter.

Can we draw a triangle and a hexagon with the same perimeter 12 cm?

Triangle	Hexagon
The triangle has 3 equal sides. Side length = Perimeter ÷ number of sides = 12 ÷ 3 = 4 cm So, the length of each side will be 4 cm.	The hexagon has 6 equal sides. Side length = perimeter ÷ number of sides = 12 ÷ 6 = 2 cm So, the length of each side will be 2 cm.
4 cm, 4 cm, 4 cm	2 cm, 2 cm, 2 cm, 2 cm, 2 cm, 2 cm

Find the side length of each figure according to its given perimeter:

Perimeter = 25 cm	Perimeter = 18 cm
The pentagon has .... sides Side length = ... ÷ .... = ...	The hexagon has .... sides Side length = ... ÷ .... = ...

Parents' Tips:

• Help your child to find the length of the side in each shape according to the perimeter of it.

Activity 4 Draw as required:

a) Draw a hexagon and a triangle with perimeter 24 cm, then find the side length of each side.

Hexagon	Triangle
• The hexagon has .... sides.	• The triangle has .... sides.
• Side length = ... ÷ .... = ...	• Side length = ... ÷ .... = ...

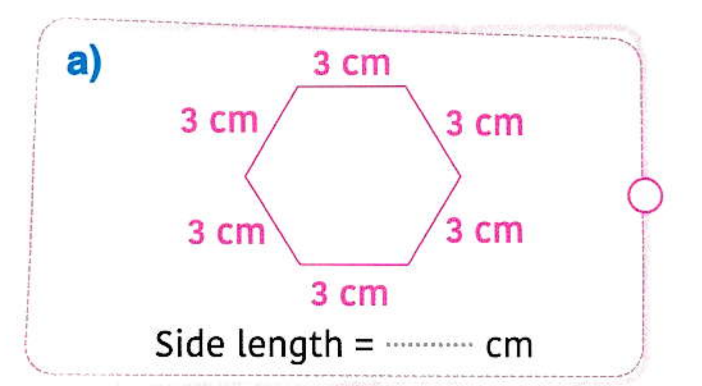
b) Draw a square and an octagon with perimeter 32 cm, then label the side length of each side.

Square	Octagon
• The square has .... sides.	• The octagon has .... sides.
• Side length = ... ÷ .... = ...	• Side length = ... ÷ .... = ...

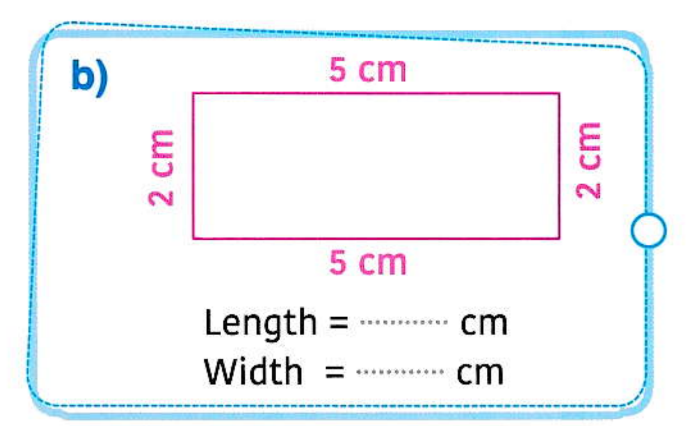
Parents' Tips:

• Help your child to draw different shapes with the same perimeter.

Activity 5 Match each shape with its perimeter:

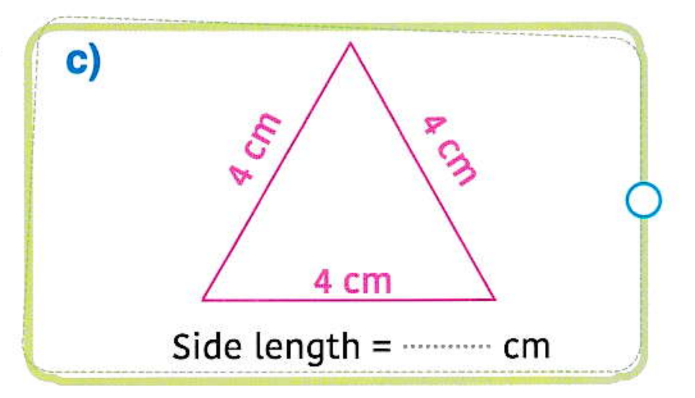


Side length = ... cm



Length = ... cm

Width = ... cm



Side length = ... cm

Perimeter = 14 cm

Perimeter = 12 cm

Perimeter = 18 cm

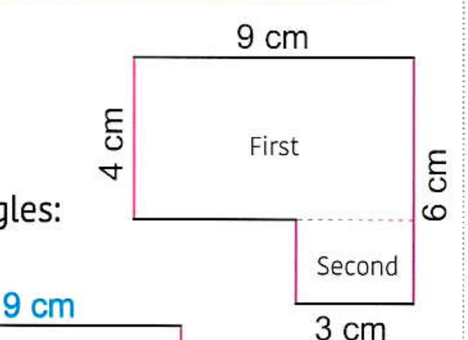
I learned

- Finding the area and perimeter of quadrilaterals (square and rectangle).
- Finding the perimeter of shapes that are not quadrilaterals.

The area of complex shapes

How can we calculate the area of a complex shape in different ways?

Noha wants to calculate the area of her bedroom. Observe the dimensions, then find the area of her bedroom.



We will divide her bedroom into 2 small rectangles:

First rectangle:

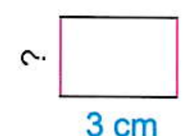
Length is 9 cm, width is 4 cm

Area = length × width

= 9 × 4 = 36 cm^2

Second rectangle:

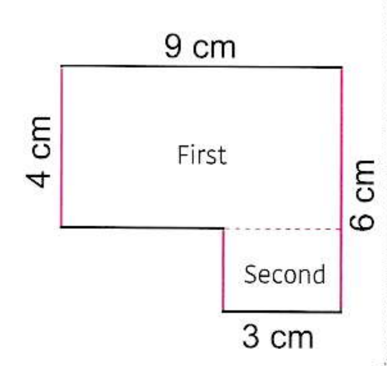
Length = 3 cm, width = ... cm



So, 4 + ...2.... = 6 cm.

To find the missing width:

We know that in a rectangle each 2 opposite sides are equal in length.



So, the width is 2 cm

Area = length × width

= 3 × 2 = 6 cm^2

To find the total area of the L shape:

Add the area of the **first rectangle and the second rectangle**:

36 + 6 = 42 cm^2

Connect

• Revise with your child finding the error with solving problems about perimeter and area.

Activity 1 Find the area of the given shapes:

Example

Calculate the area of the given complex shape: (L shape)

- **First rectangle:**

Length = ...5... cm, width = ...3... cm.

Area = ...5... × ...3... = ...15... cm^2

- **Second rectangle:**

Length = 3 + ...7... = 10 cm. (10 - 3 = 7)

Length = ...7... cm, width = ...2... cm.

Area = ...7... × ...2... = ...14... cm^2

3 cm

First rectangle

5 cm

Second rectangle

2 cm

10 cm

Total area = ...14... + ...15... = ...29... cm^2

a) Calculate the area of the given complex shape:

- **First rectangle:**

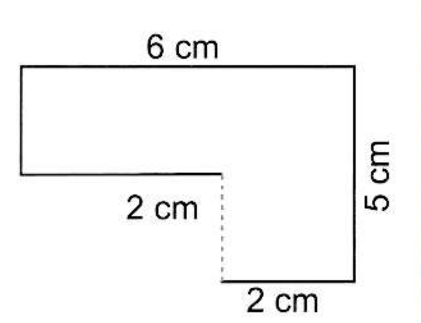
Length = ... cm, width = ... cm.

Area = ... × .... = ... cm^2

- **Second rectangle:**

Length = ... cm, width = ... cm.

Area = ... × .... = ... cm^2

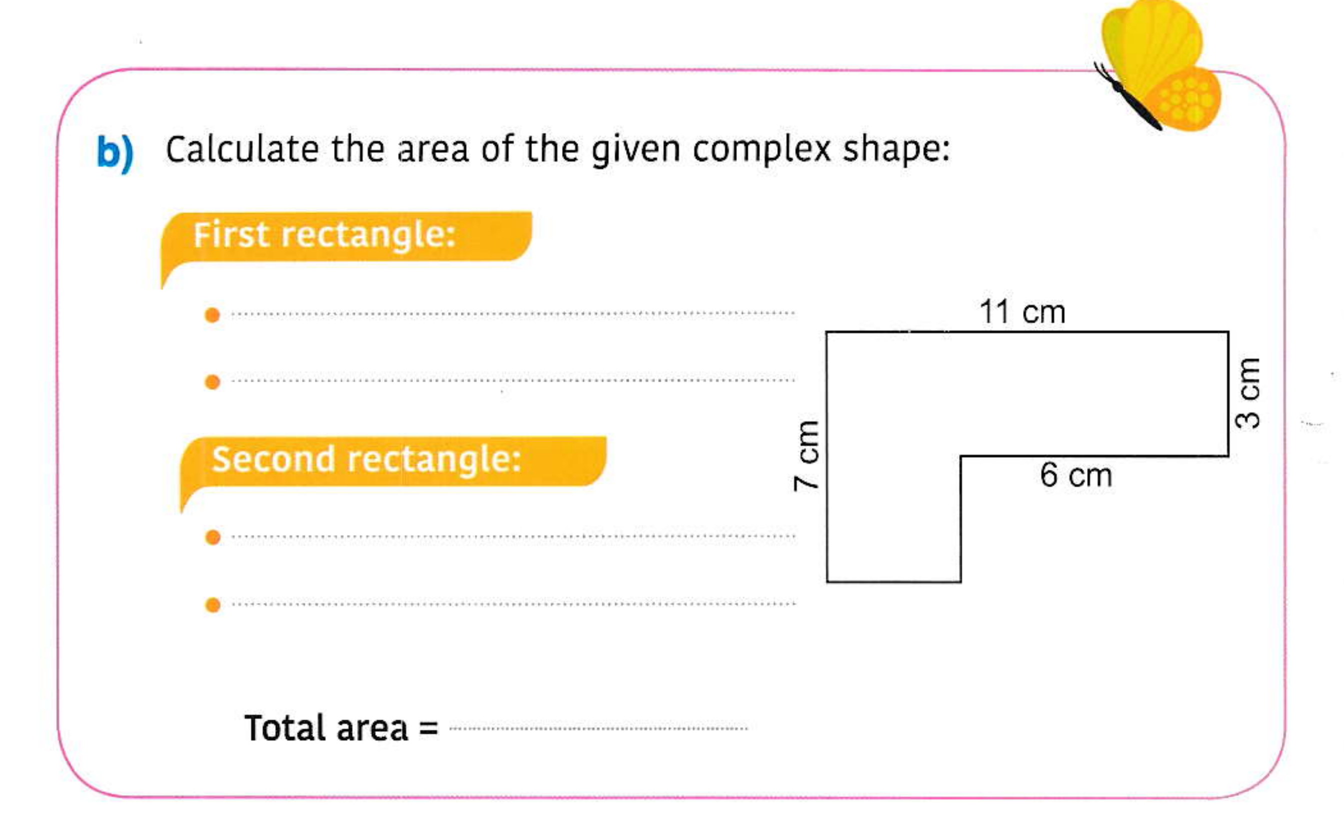


Total area = ... + ... = ... cm^2

Parents' Tips:

- Help your child to get the area of L shapes.

b) Calculate the area of the given complex shape:



First rectangle:

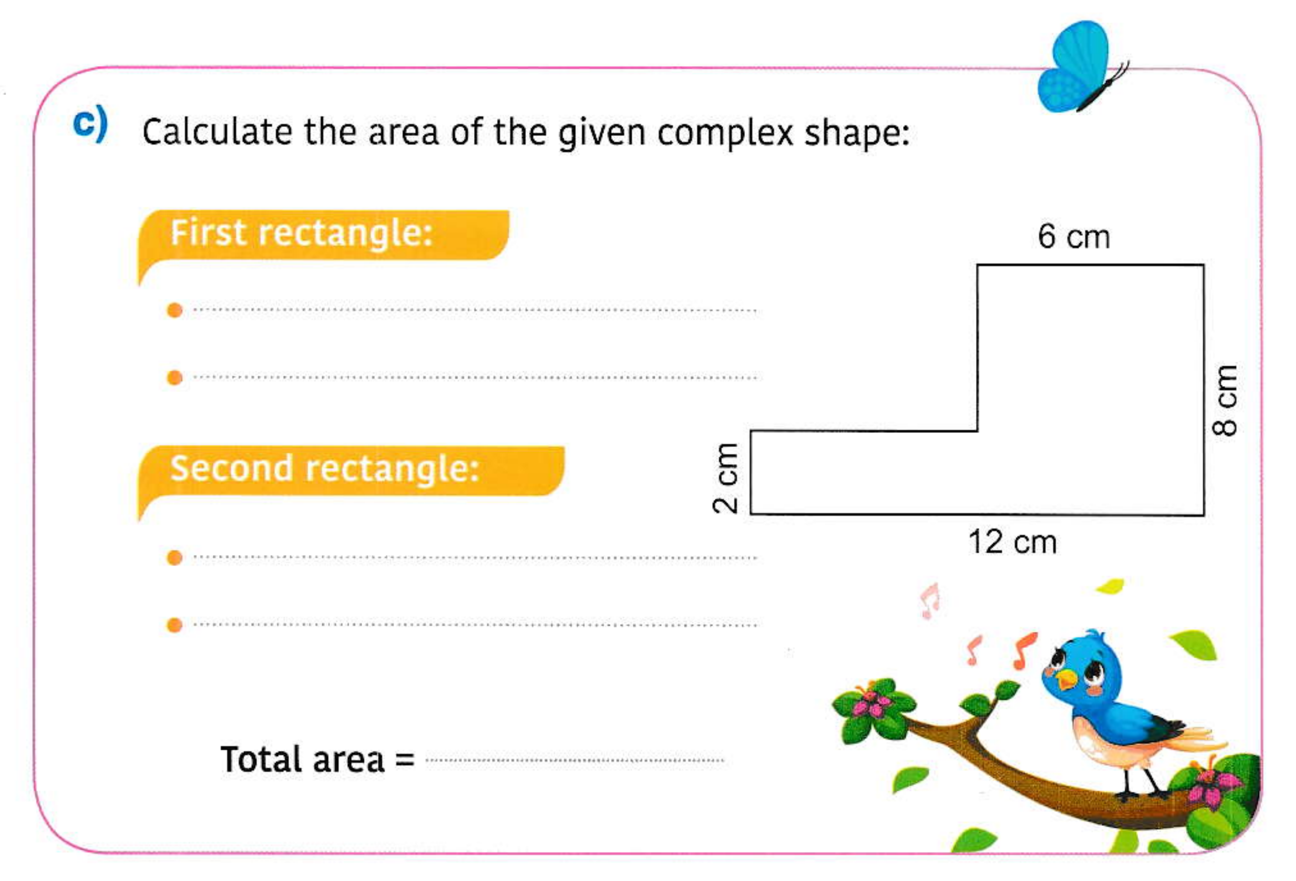
- ....
- ....

Second rectangle:

- ....
- ....

Total area = ...

c) Calculate the area of the given complex shape:



First rectangle:

- ....
- ....

Second rectangle:

- ....
- ....

Total area = ...

Parents' Tips:

- Help your child to find the area of different L shapes.

How can we calculate the area of complex shapes in another way?

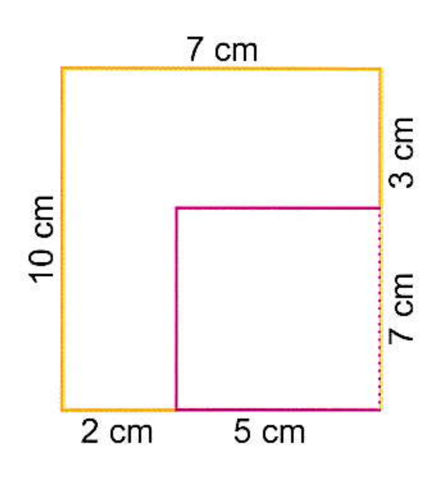
- We will draw dots to complete the given L shape to form a rectangle.

Area of the big rectangle:

Length = 10 cm, width = 7 cm

Area = length × width

= $10 \times 7 = 70\ cm^2$



Area of the shaded rectangle:

Length = 3 - **7** = 10 (10 - 3 = 7)

width = 2 - **5** = 7 (7 - 2 = 5)

Area = length × width

= $7 \times 5 = 35\ cm^2$

To find the area of the L shape

We subtract:

Area of the big rectangle – Area of the shaded rectangle

70 – 35 = $35\ cm^2$

The perimeter of the L shape:

= 10 + 2 + 7 + 5 + 3+ 7 = 34 cm

Parents' Tips:

- Help your child to use different ways to get the area of L shapes.

Activity 2 Find the area of the given complex shape:

Example

Rectangle 1 (the big rectangle):

The length = 12 cm, width = 5 cm.

Area = 12 × 5 = 60 cm^2

Rectangle 2 (the drawn rectangle):

Length = 2 + 10 = 12 cm

Width = 3 + 2 = 5 cm

So, length = 10 cm, width = 2 cm.

Area = 10 × 2 = 20 cm^2

2 cm
5 cm
3 cm
12 cm

Total area of the L shape
= 60 - 20 = 40 cm^2

a) **Rectangle 1 (the big rectangle):**

The length = ... cm, width = ... cm.

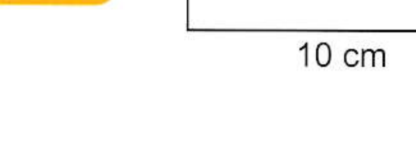
Area = ... × .... = ... cm^2

Rectangle 2 (the drawn rectangle):

Length= ....

Width = ...

Area = ... × .... = ... cm^2

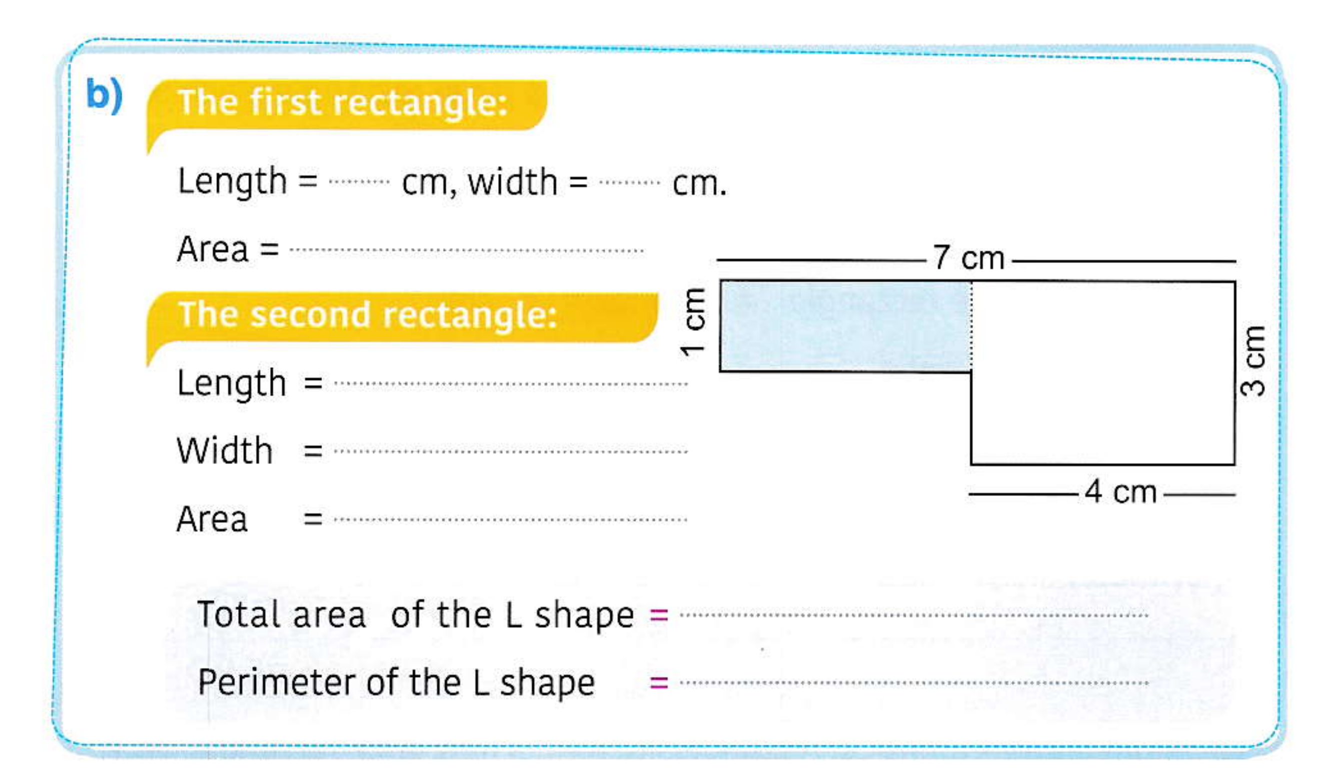


Total area of the L shape
= .... − .... = ... cm^2

Parents' Tips:
- Encourage your child to solve more examples on finding the area of L shapes.

Activity 3

Find the area and the perimeter of the given complex shape:



b) **The first rectangle:**

Length = ... cm, width = ... cm.

Area = ...

The second rectangle:

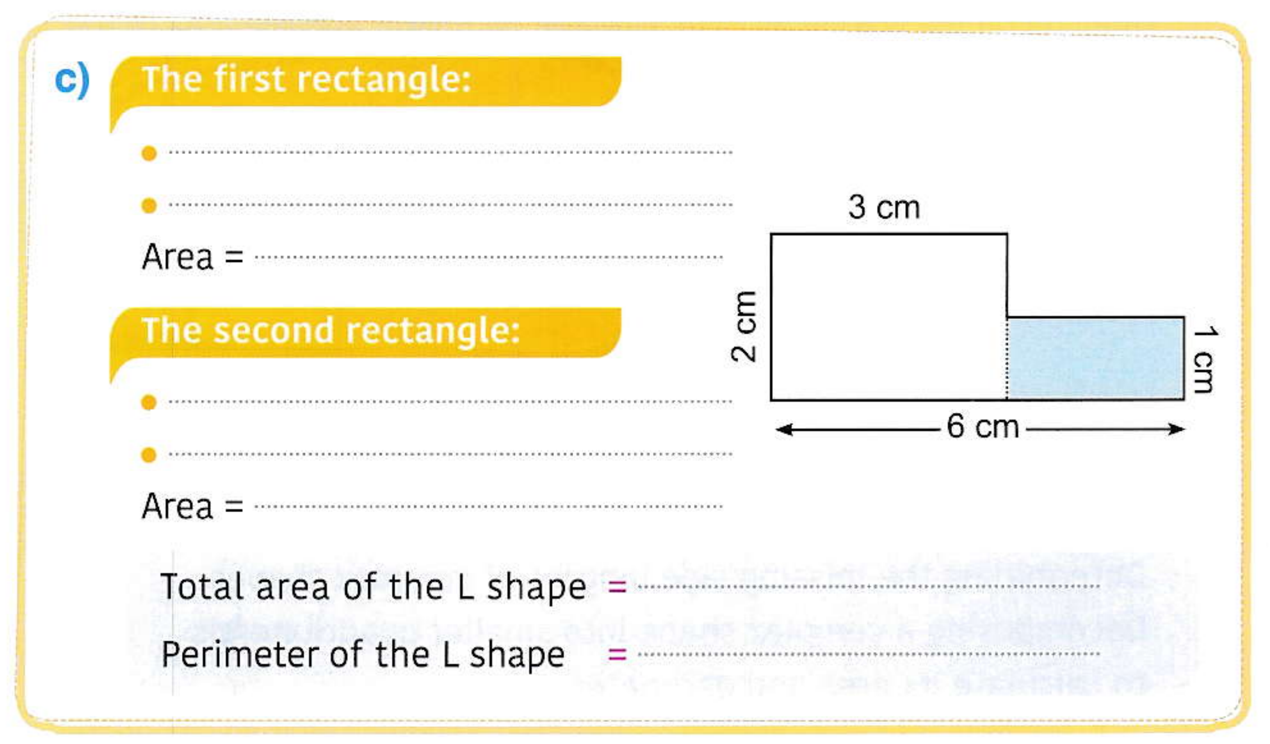
Length = ...

Width = ...

Area = ...

Total area of the L shape = ...

Perimeter of the L shape = ...



c) **The first rectangle:**

- ....
- ....

Area = ...

The second rectangle:

- ....
- ....

Area = ...

Total area of the L shape = ...

Perimeter of the L shape = ...

Parents' Tips:

- Help your child to find the area and the perimeter of different L shapes.

Activity 4 Read, then solve:

Example

Rahma draws 6 identical rectangles to form a large rectangle, each of the small rectangles is 4 cm by 3 cm. Find the perimeter and the area of the large rectangle.

Length of the large rectangle = 4 + 4 + 4 = 12 cm.

Width of the large rectangle = 3 + 3 = 6 cm.

- **The large rectangle:**

Length = 12 cm, width = 6 cm.

Area = Length × width = 12 × 6 = 72 cm^2

Perimeter = 12 + 12 + 6 + 6 = 36 cm

4 cm
3 cm

a) Karim draws 4 identical rectangles to form a new large rectangle, each small rectangle is 5 cm by 2 cm. Find the perimeter and the area of the large rectangle.

Length of the large rectangle = ...

Width of the large rectangle = ...

Area = ...

Perimeter = ...

5 cm
2 cm

I learned

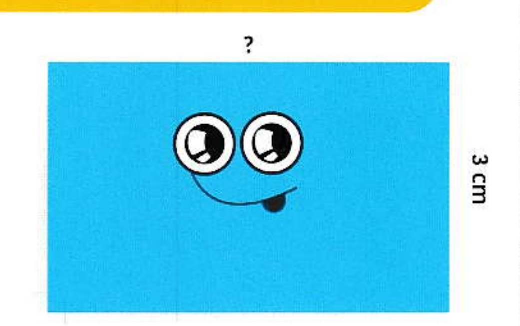
- Determining the missing side lengths of complex shapes.
- Decomposing a complex shape into smaller quadrilaterals to calculate its area and perimeter.

Some applications on the perimeter and area of the rectangle and square

How can we find the perimeter of a rectangle with given area?

I am a rectangle:

- My width is 3 cm.
- My area is 12 cm^2.
- Find my perimeter.



The area of a rectangle = Length × Width

So, 12 = ? × 3

12 = 4 × 3

So length = 4 cm

We can write this multiplication equation as a division equation

$12 \div 3 = 4$

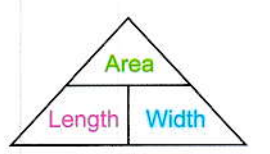
So, length = 4 cm

Therefore the perimeter will be

$4 + 4 + 3 + 3 = 14$ cm.

Length = Area ÷ Width

Width = Area ÷ Length



Connect

- Revise with your child reading the time on both analog and digital clocks.

Activity 1 Find the missing:

Example

8 cm

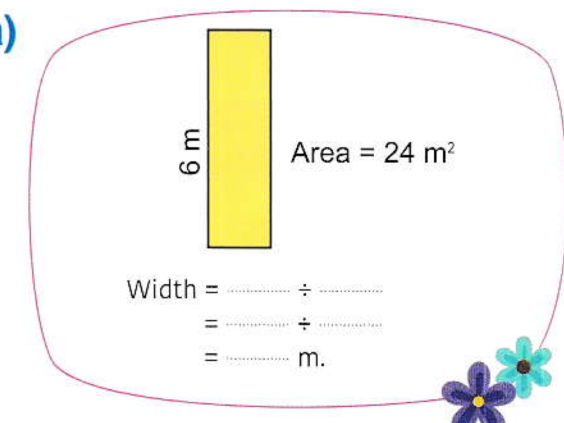
? | Area = 16 cm²

Width = Area ÷ Length

= 16 ÷ 8

= 2 m.

a)



b)

Area = 18 m² | 3 m

length = ... ÷ ....

= .... ÷ ....

= .... m.

Perimeter = ... m.

c)

9 m

Area = 27 m²

Width = ... ÷ ....

= .... ÷ ....

= .... m.

d)

6 cm

? | Area = 24 cm²

Length = ... ÷ ....

= .... ÷ ....

= .... cm.

Perimeter = ... cm.

e)

4 cm

Area = 20 cm²

Length = ... ÷ ....

= .... ÷ ....

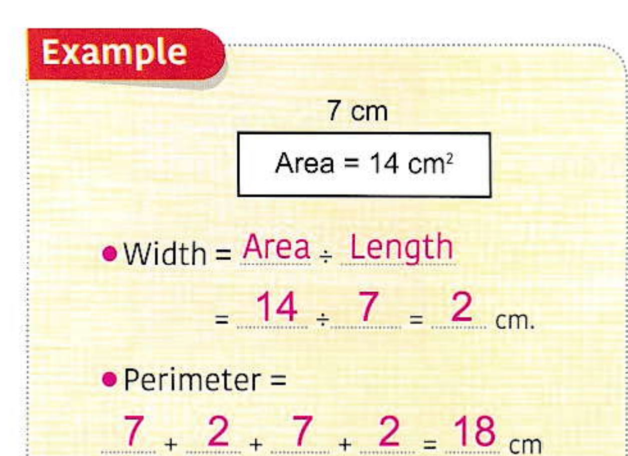
= .... cm.

Parents' Tips:

- Help your child to get the missing length or width of different rectangles.

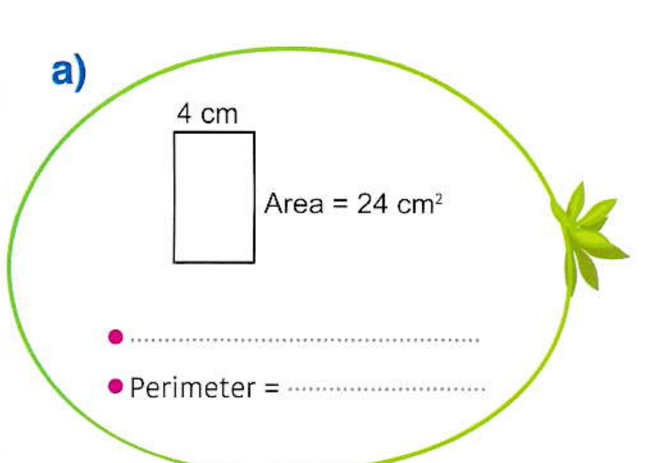
Activity 2 Find the perimeter of the following rectangles:

Example



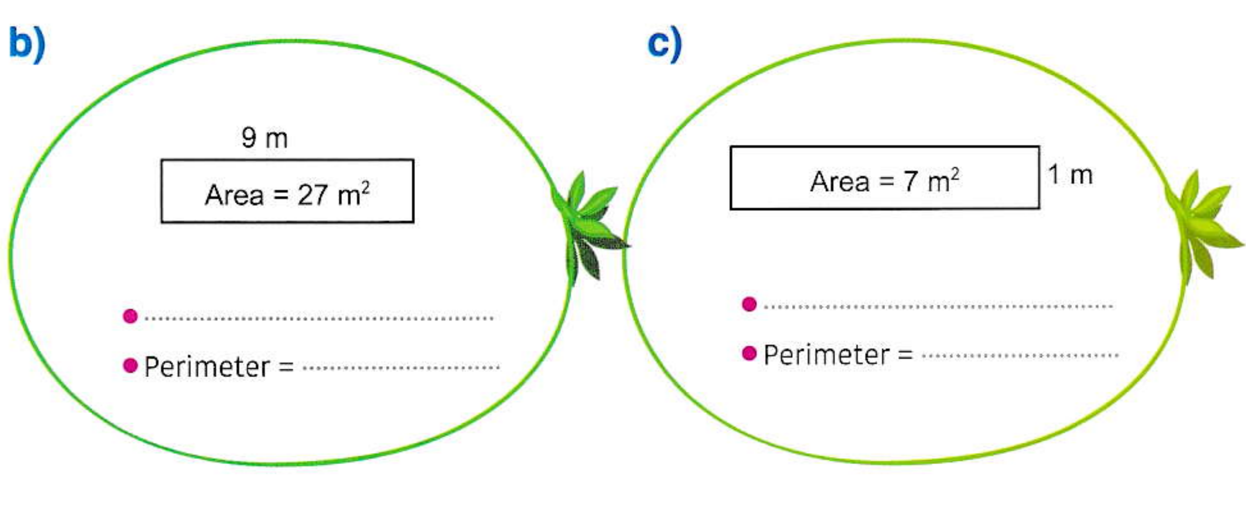
- Width = Area ÷ Length
  = 14 ÷ 7 = 2 cm.
- Perimeter =
  7 + 2 + 7 + 2 = 18 cm

a)



- ....
- Perimeter = ...

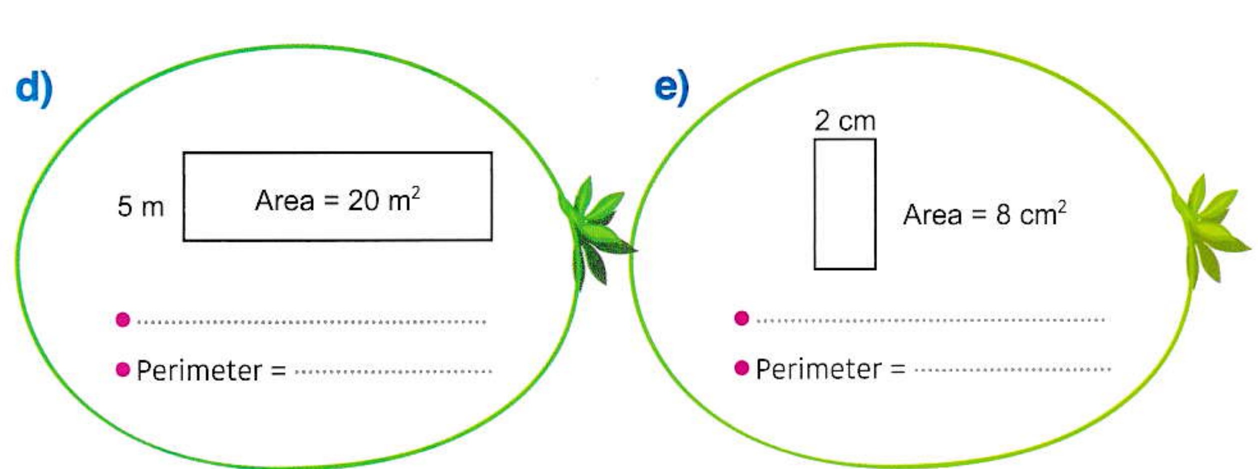
b) **c)**



b)
- ....
- Perimeter = ...

c)
- ....
- Perimeter = ...

d) **e)**



d)
- ....
- Perimeter = ...

e)
- ....
- Perimeter = ...

Parents' Tips:

- Help your child to get the perimeter of a rectangle with given area and one dimension.

How can we calculate the perimeter of a square with given area?

I am a square:

- The measure of my side length is 5 cm.
- My area is 25 cm^2.
- Find my perimeter.

5 cm

25 cm^2

- **Area of a square = side length × side length**

  Since that the square has 4 equal sides

  So, area = 5 × 5 = 25 cm^2

- **Perimeter of a square = Side length × 4**

  = 5 × 4 = 20 cm.

Activity 3 Find the perimeter of the following squares:

a) Area = 16 cm^2

Perimeter = ... cm.

b) Area = 36 cm^2

Perimeter = ... cm.

Parents' Tips:

- Help your child to find the perimeter of a square using its area.

Activity 4 Complete:

a)

Perimeter = 12 cm

Area = ... cm^2.

b)

Area = 25 cm^2

Perimeter = ... cm.

c)

Area = 16 m^2

Perimeter = ... m.

d)

Perimeter = 24 cm

Area = ... cm^2.

Activity 5 Read, then solve:

Example

Rasha drew four identical squares, the area of each one is 16 cm^2 and the length of one side is 4 cm. Find the perimeter and the area of the whole four squares.

4 cm | 4 cm | 4 cm | Area = 16 cm^2

- We will identify the four squares all together as a 1 big square:

So, its side length will be 4 + 4 = 8 cm

The perimeter = **Side length × 4**

= **8** × **4** = **32** cm.

The area = **Side length × side length**

= **8** × **8** = **64** cm^2.

Parents' Tips:

- Help your child to solve story problems on the area and perimeter of squares.

a) Sherif painted a square of area 36 cm^2.

If its side length is 6 cm, calculate the perimeter of his painting.

Perimeter = ...

b) Mohamed drew four identical squares. The area of each one is 36 cm^2 and the length of one side is 6 cm. Find the total perimeter and area of the four squares.

Perimeter = ...

= ....

Area = ...

= ....

	Area = 36 cm^2

Parents' Tips:

- Help your child to find the perimeter and the area of the given shapes.

Activity 6 Draw as required:

Example

2 different rectangles with area 12 cm^2 each.

6 cm, 2 cm

4 cm, 3 cm

Area = 6 × 2 = 12 cm^2

Area = 4 × 3 = 12 cm^2

a) 2 different rectangles with area 8 cm^2 each.

Area = ...

Area = ...

b) 2 different rectangles with area 6 cm^2 each.

Area = ...

Area = ...

Parents' Tips:

- Help your child to draw 1 different rectangle with the same area.

Calculate the area and perimeter of the following:

Kitchen:

Perimeter = 2 + 2 + 8 + 8 = 20 units.

Area = 8 × 2 = 16 square units.

Bedroom:

Perimeter = ...

Area = ...

Living room:

Perimeter = ...

Area = ...

Dining room:

Perimeter = ...

Area = ...

Bathroom:

Perimeter = ...

Area = ...

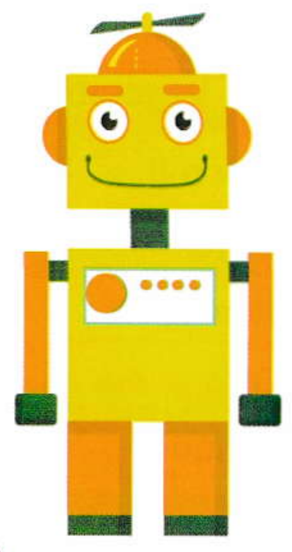
Parents' Tips:

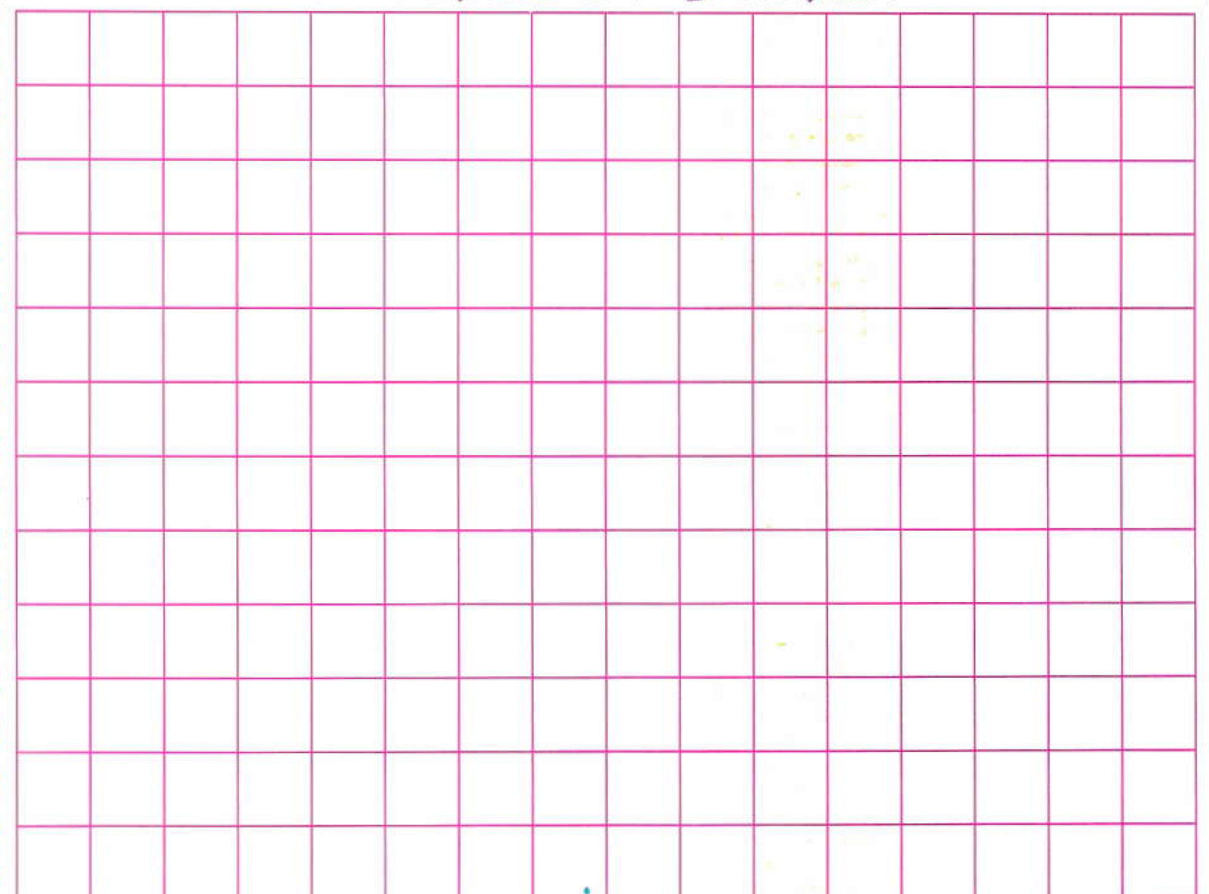
- Encourage your child to find the area of each room at the house.

Activity 8 Draw the following robot using the given areas:

- The area of my robot's body is 36 square units.
- The area of my robot's head is 16 square units.
- The area of my robot's arms is 4 square units.
- The area of my robot's legs is 5 square units.
- The total area of my robot's is:

(36 + 16) + (4 + 5) = ... square units.





Parents' Tips:

- Help your child to draw each part of the previous robot.

Color and draw to build your vegetable garden as required:

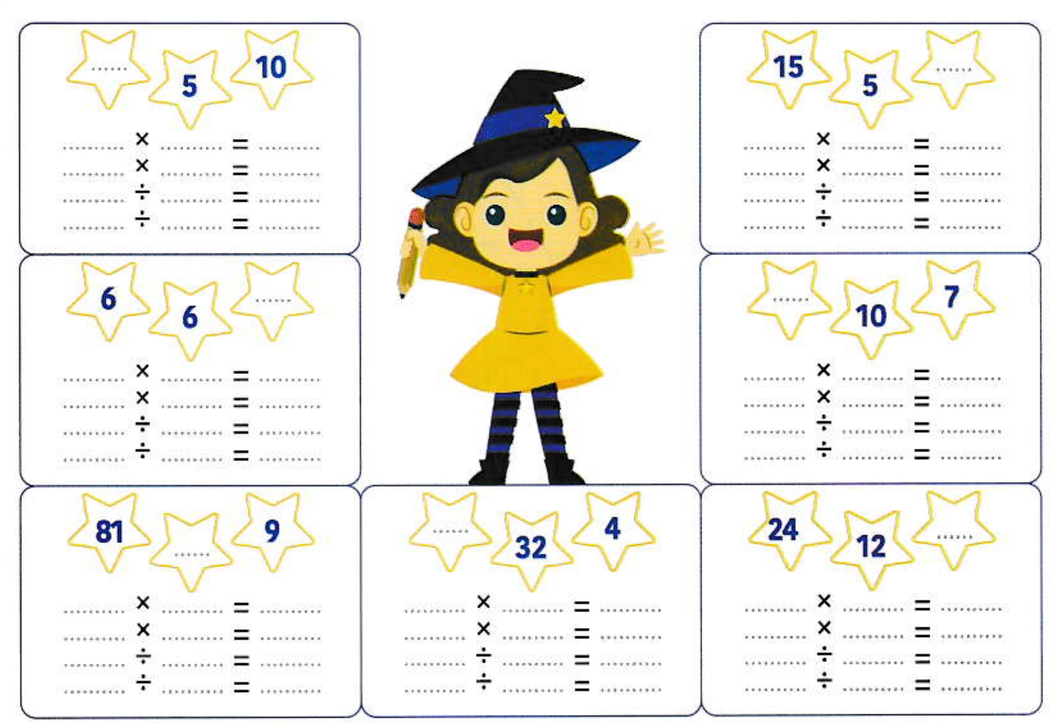
Vegetable	Color	Length/Width	Perimeter
Broccoli	Green	5 units / 3 units	.... U.
Carrot	Orange	4 units / 4 units	.... U.
Tomato	Red	6 units / 5 units	.... U.
Corn	Yellow	4 units / 3 units	.... U.
Potato	Brown	8 units / 2 units	.... U.

I learned

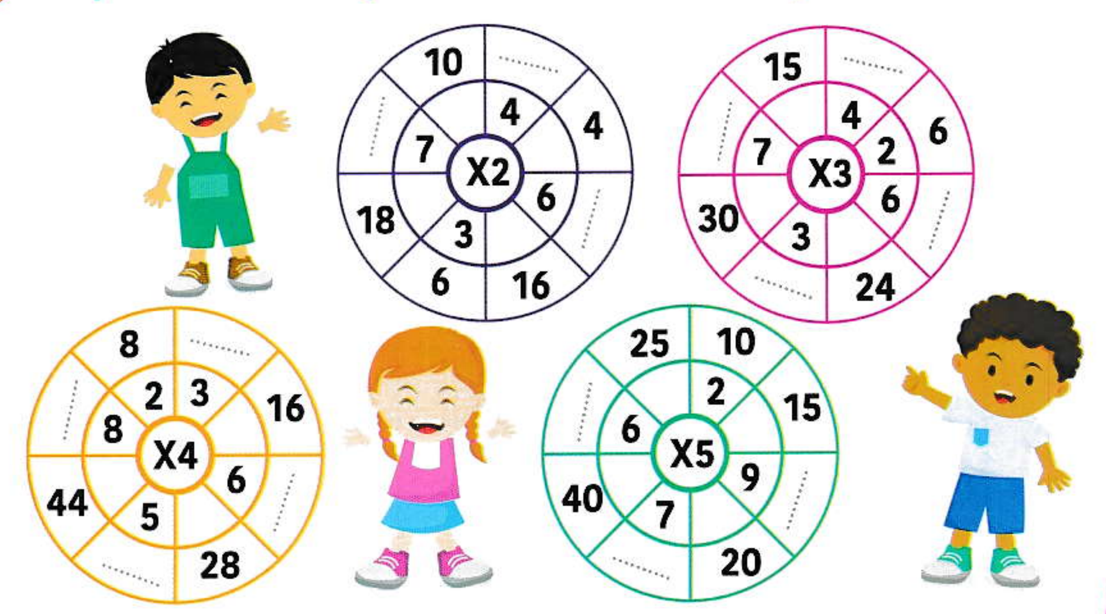
- Determining the perimeter of a rectangle with a given area and one of its dimensions.
- Completing designing using the grid to demonstrate understanding of area and perimeter.

General Activities on Chapter 5

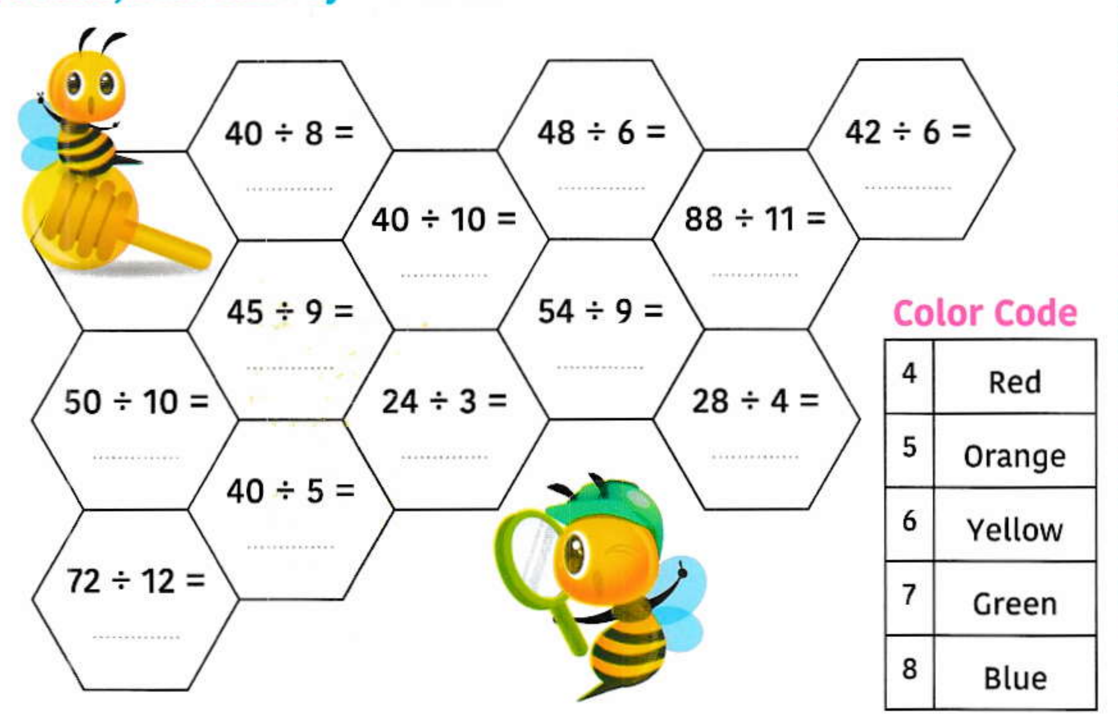
1 Complete the fact families:



2 Complete these multiplication wheels as fast as you can:



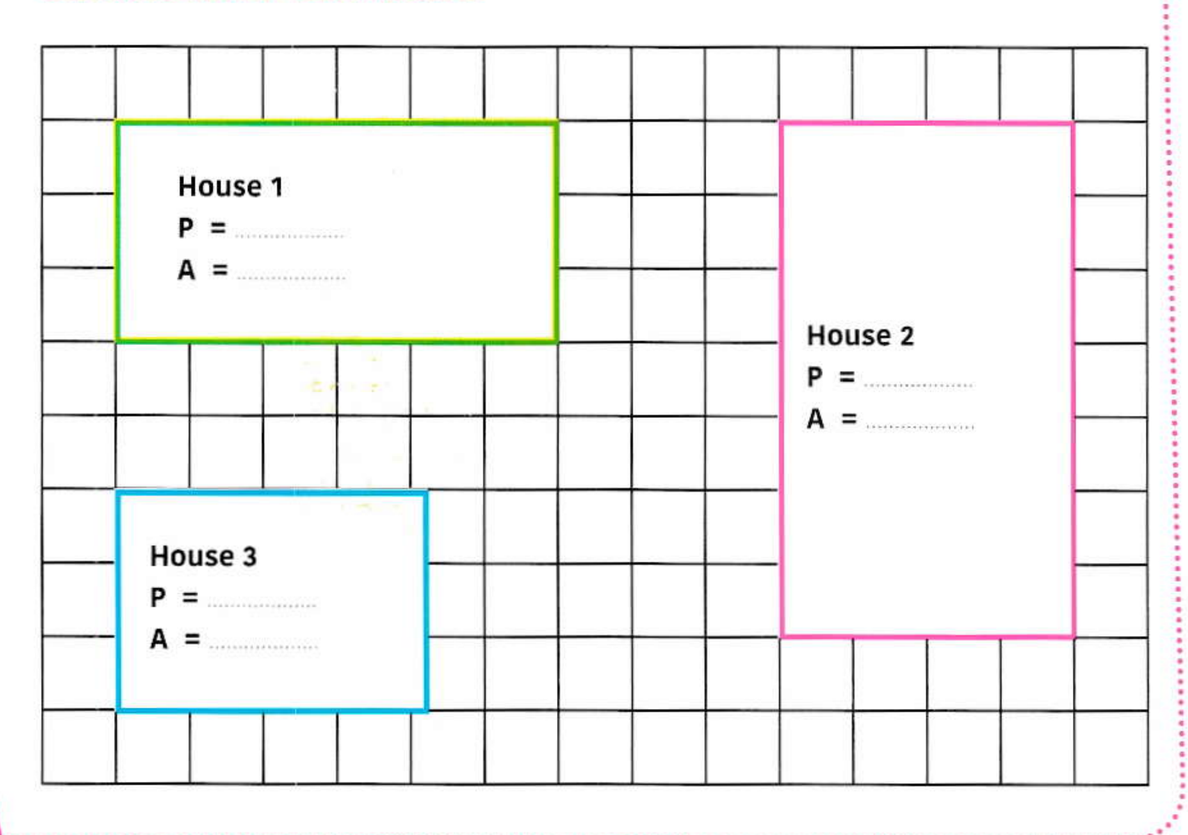
3 Divide, then color by the code:



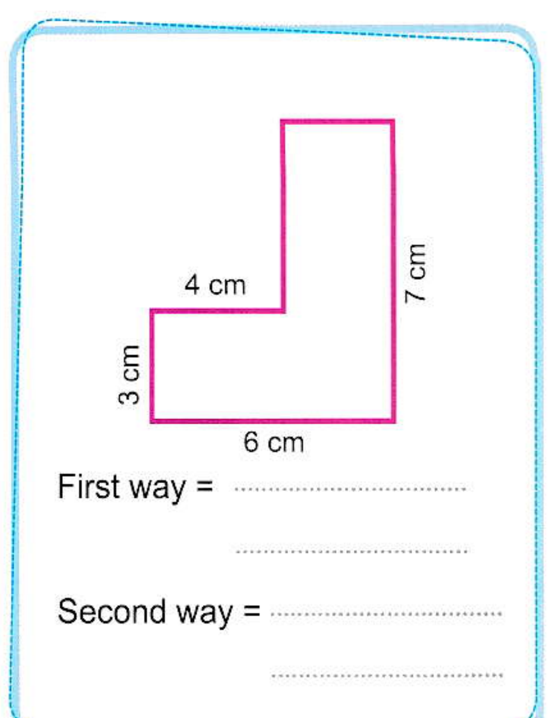
Color Code

4	Red
5	Orange
6	Yellow
7	Green
8	Blue

4 Find and record the perimeter and area of each house. Write your answers inside each house:



5 Find the area of the complex shapes in 2 different ways:



First way = ...

....

Second way = ...

....

2 cm

6 cm

9 cm

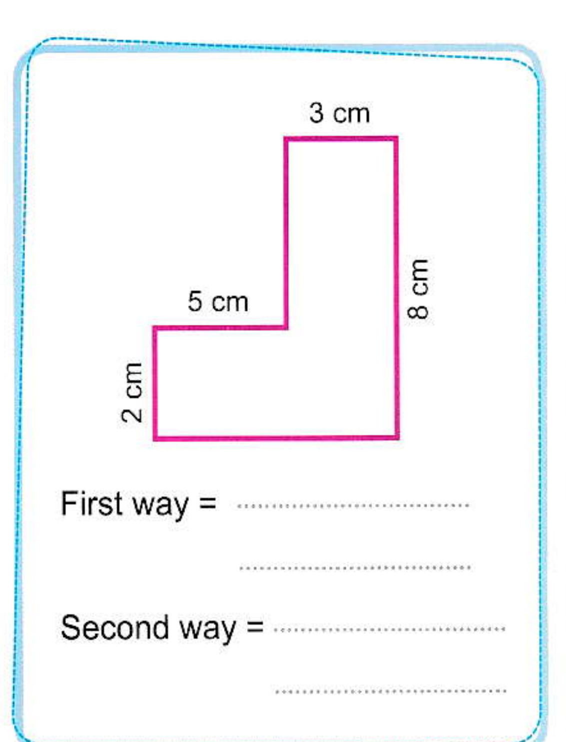
3 cm

First way = ...

....

Second way = ...

....



First way = ...

....

Second way = ...

....

5 cm

4 cm

10 cm

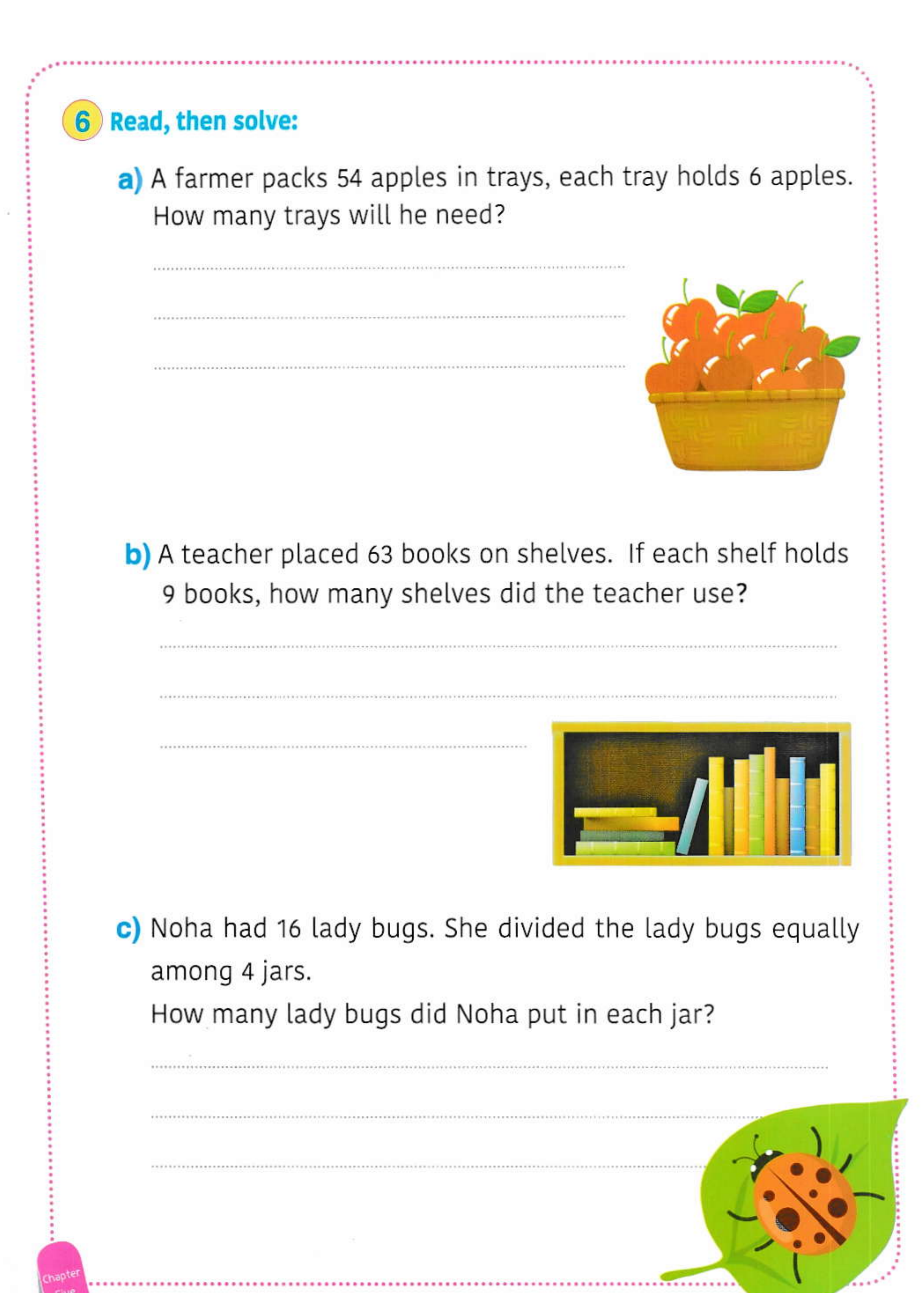
7 cm

First way = ...

....

Second way = ...

....



6 Read, then solve:

a) A farmer packs 54 apples in trays, each tray holds 6 apples. How many trays will he need?

b) A teacher placed 63 books on shelves. If each shelf holds 9 books, how many shelves did the teacher use?

c) Noha had 16 lady bugs. She divided the lady bugs equally among 4 jars.
How many lady bugs did Noha put in each jar?

7 Draw as required:

a) Draw an octagon and a square with perimeter 32 cm.

Octagon	Square

b) Draw a hexagon and triangle with perimeter of 24 cm.

Hexagon	Triangle

Connect on Chapter 5

1 Read, then solve:

a) An apple has an average mass of 50 grams and an pineapple has an average mass of 100 grams. If Nour had 5 apples and 3 pineapples. What is the total mass of his fruits?

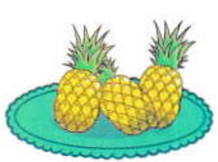
Step 1 :

The mass of apples = ... × .... = ...

The mass of pinapples = ... × .... = ...

Step 2:

The total mass of all fruits = ... + ... = ...



b) Ahmed and Sara have two pieces of rope. If Ahmed's rope is 47 cm long and Sara's rope is 15 cm more than Ahmed's rope, find the total length of their ropes.

Sara's rope = ... + ... = ...

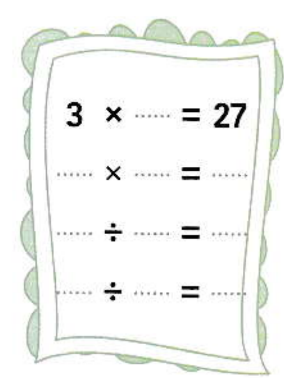
Ahmed's rope = ... cm.

The total length of their ropes = ... + ... = ... cm.

2 Draw the 2 hands of the clock to show the time:

7 : 15	3 : 35	5 : 55	6 : 20

1 Complete each fact family:



...... × 4 = 32
...... × ...... = 32
...... ÷ ...... = ...
...... ÷ ...... = ...

...... × ...... = ...
...... × ...... = ...
72 ÷ ...... = 9
...... ÷ ...... = ...

...... × ...... = ...
...... × ...... = ...
...... ÷ 8 = 11
...... ÷ ...... = ...

2 Complete the missing:

9 cm

Area = ...?......

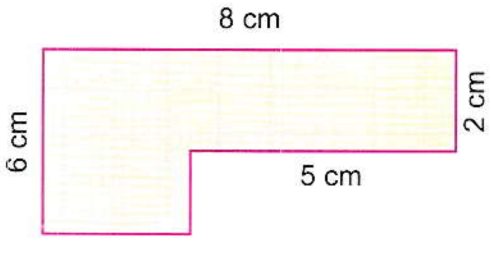
4 cm

? Area = 24 cm^2

4 cm

6 cm

? Area = 24 cm^2

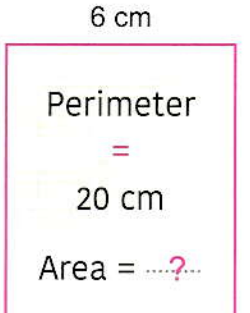


Area = ...?......

Area = 48 cm^2

Perimeter = ...?......

8 cm



Al-Adwaa oasis

DESIGN AND DRAW A PLAN OF A HOUSE

Color and form each room of the house using the dimensions below, then find the area of each room in the house.

Room	Color	Length/Width	Area
Kitchen	Blue	6 units / 5 units	....
Bedroom 1	Green	5 units / 5 units	....
Bedroom 2	Pink	5 units / 4 units	....
Living room	Yellow	7 units / 6 units	....
Bathroom	Orange	3 units / 3 units	....
Dining room	Red	6 units / 5 units	....

Missing factor mystery:

Solve, then color using the given key:

9	12	10	12	14	0	8	2	10	9
10	9	15	14	8	1	9	10	12	10
12	10	9	0	11	0	11	9	14	14
14	12	15	0	1	7	0	12	15	15
15	5	10	2	8	2	8	15	9	12
9	8	8	5	4	2	4	2	10	14
10	6	2	8	2	8	2	8	14	9
14	11	2	2	8	2	8	2	15	10
2	0	11	8	2	8	2	7	12	9
12	1	7	8	8	2	1	8	10	14

Yellow

$20 \div 4 = \ldots\ldots$

$6 \times \ldots\ldots = 24$

Green

$36 \div 6 = \ldots\ldots$

$24 \div \ldots\ldots = 12$

Red

$27 \div \ldots\ldots = 9$

$4 \times \ldots\ldots = 24$

$\ldots\ldots \times 6 = 66$

$\ldots\ldots \times 12 = 0$

$14 \div \ldots\ldots = 14$

$42 \div 7 = \ldots\ldots$

Blue

$54 \div 6 = \ldots\ldots$

$\ldots\ldots \times 9 = 90$

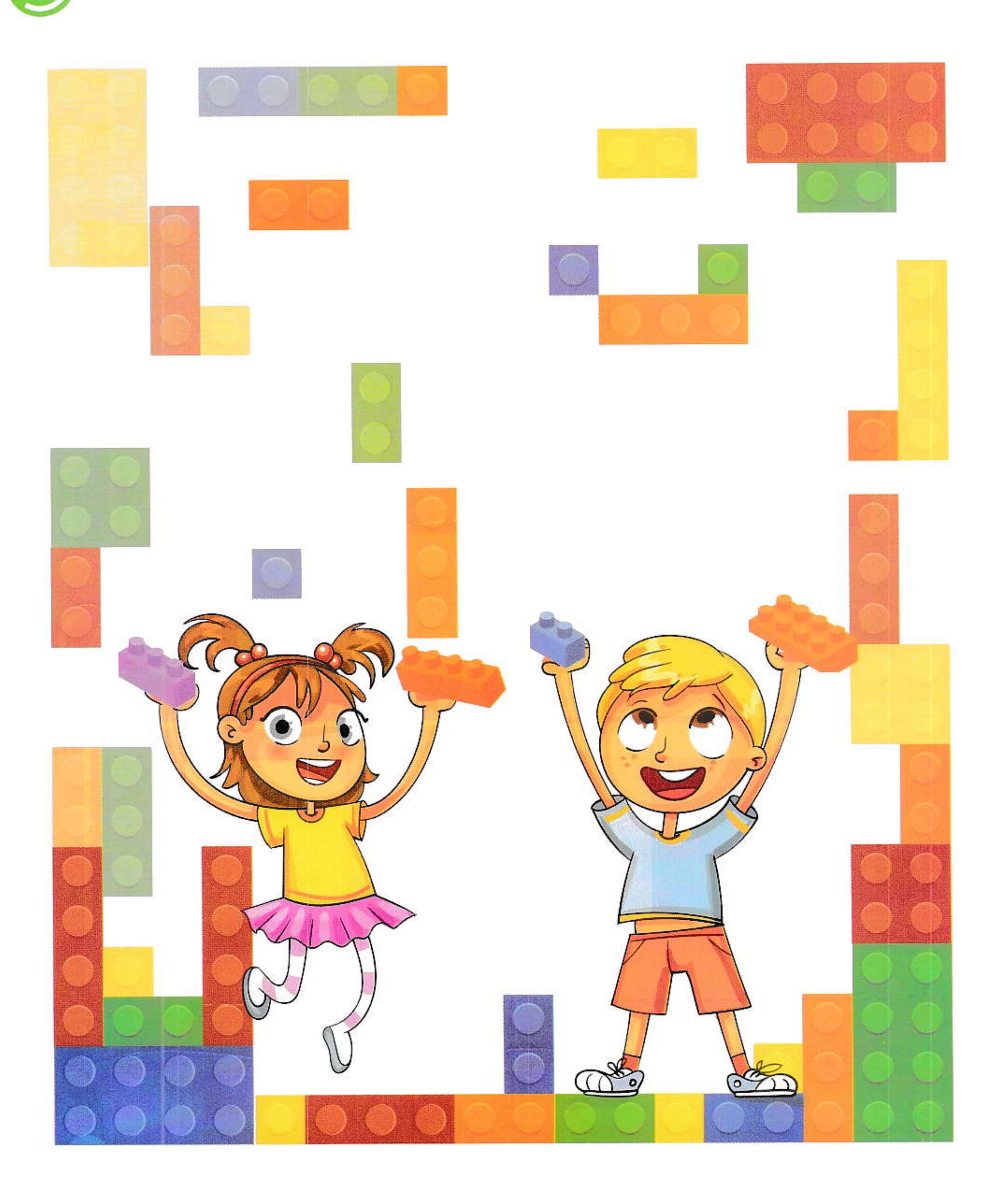
$40 \div 4 = \ldots\ldots$

$20 \div 2 = \ldots\ldots$

$7 \times 2 = \ldots\ldots$

$30 \div 2 = \ldots\ldots$

Chapter 6

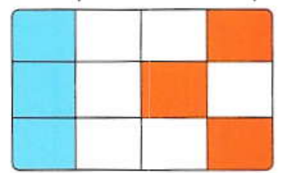


Pacing Guide

Lesson	Instructional Focus	Key vocabulary
Lesson 111	**The unconventional halves** • Color shapes to generate unconventional halves.	• Unconvential
Lesson 112	**Calculating half the area of a rectangle** • Apply understanding of area and fractions to solve story problems.	• Area • Half
Lesson 113	**Ordering fractions on the number line** • Order fractions on a number line. • Generate questions or problems to review Primary 3 math.	• Equivalence • Denominator • Interval • Numerator
Lesson 114	**The place value** • Solve place value problems. • Generate questions or problems to review Primary 3 math.	• Place value
Lesson 115	**Elapsed time** • Solve elapsed-time problems. • Generate questions or problems to review Primary 3 math.	• Elapsed
Lesson 116	**Measuring length** • Measure objects to the nearest half centimeter. • Use measurement data to make line plots. • Analyze line plots to answer questions about the data. • Generate questions or problems to review Primary 3 math.	• Centimeters • Data • Key • Line plot
Lesson 117	**Graphs** • Collect and record data in a table. • Use collected data to make a line plot. • Use collected data to make a bar graph. • Analyze graphs to answer questions about data. • Compare the effectiveness of line plots and bar graphs to display data. • Generate questions or problems to review Primary 3 math.	• Axis • Categorical data • Frequency • Line plot • Scale
Lessons 118,119 and 120	**Calculating area and perimeter of irregular shapes** • Draw quadrilaterals and non-quadrilaterals on grid paper to produce a game board. • Find the area and perimeter of each shape on a game board. • Review mathematics skills and concepts from Primary 3.	• Irregular shapes • Area • Perimeter

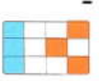
The unconventional halves

How can we figure out the shapes that represent unconventional halves?



Taha and Rawan were coloring a board which was divided into 12 equal parts. Each of them took 6 parts to color. So, Taha and Rawan colored exactly 3 parts out of their 6 parts, but in different ways. What did you notice?

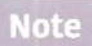
I NOTICED THAT:



- Rawan's colored parts = Taha's colored parts

$\frac{3}{12} = \frac{3}{12}$

- The colored parts are exactly the same size but arranged differently.



I NOTICED THAT:

The total of the colored parts represents half of the whole.

$\frac{3}{12} + \frac{3}{12} = \frac{6}{12} = \frac{1}{2}$

Taha and Rawan colored half of the board.

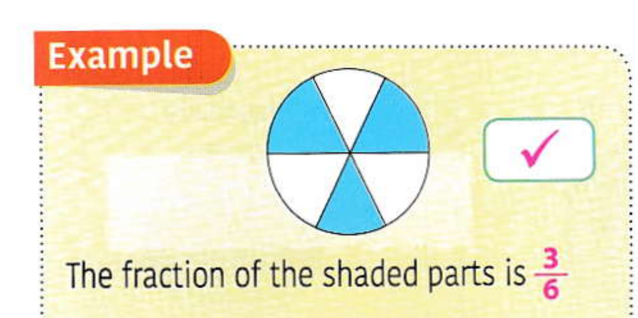
Note

- The unconventional halves are shaded parts that represents half of the whole shape, but just arranged in a different way.

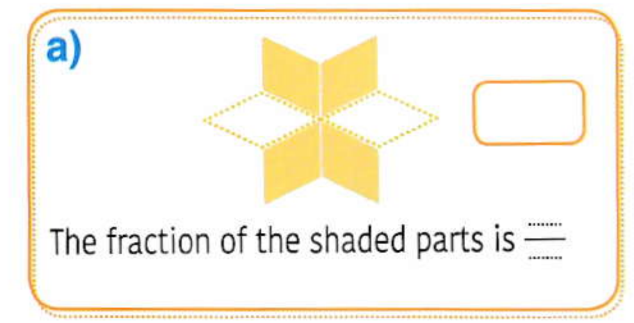
Connect:

- Revise with your child solving some addition and subtraction review problems.

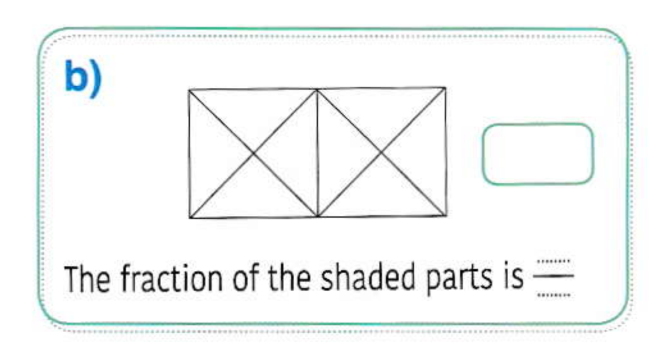
Write the fraction, then tick (✓) if the shaded parts represent the half of the shape:



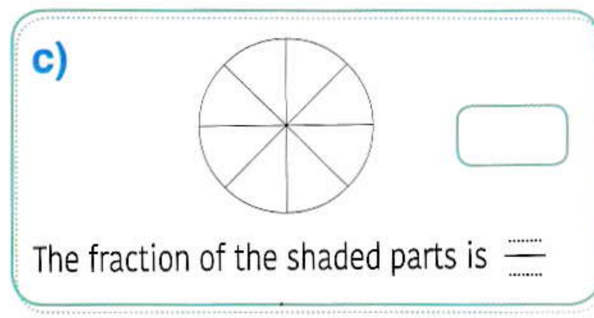
The fraction of the shaded parts is $\frac{3}{6}$



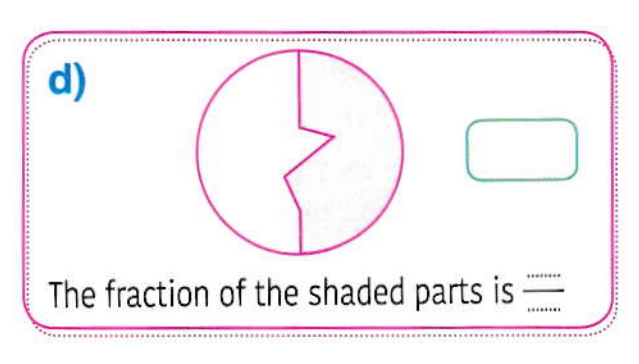
The fraction of the shaded parts is $\frac{\dots}{\dots}$



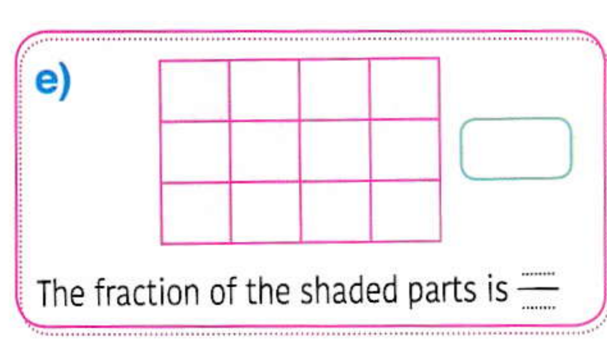
The fraction of the shaded parts is $\frac{\dots}{\dots}$



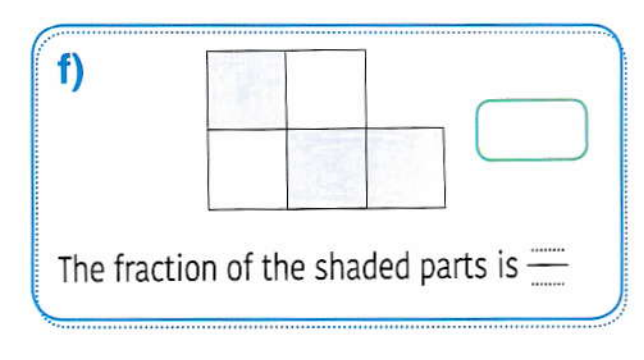
The fraction of the shaded parts is $\frac{\dots}{\dots}$



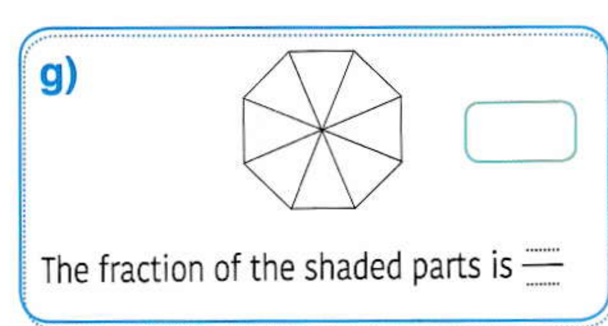
The fraction of the shaded parts is $\frac{\dots}{\dots}$



The fraction of the shaded parts is $\frac{\dots}{\dots}$



The fraction of the shaded parts is $\frac{\dots}{\dots}$



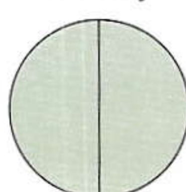
The fraction of the shaded parts is $\frac{\dots}{\dots}$

Parents' Tips:

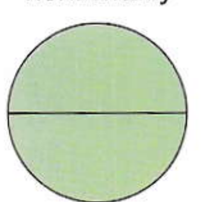
- Help your child to recognize the examples of unconventional halves.

How can we cut shapes exactly into 2 halves in different ways?

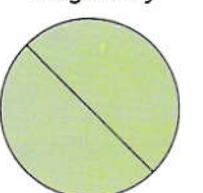
Vertically



Horizontally

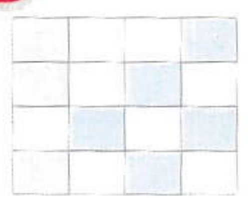


Diagonally



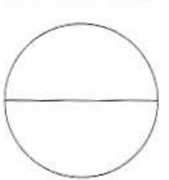
Activity 2 **Shade exactly one half of the given shapes, then represent it as a fraction:**

Example



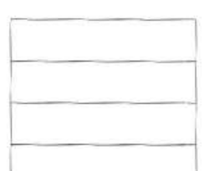
Shaded parts = $\frac{8}{16} = \frac{1}{2}$

a)



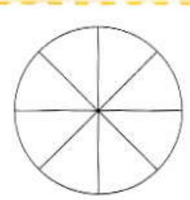
Shaded parts = $\frac{\cdots}{\cdots} = \frac{1}{2}$

b)



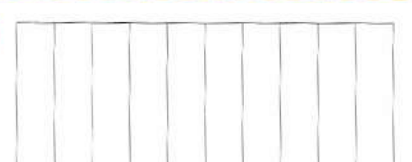
Shaded parts = $\frac{\cdots}{\cdots} = \frac{1}{2}$

c)



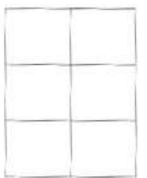
Shaded parts = $\frac{\cdots}{\cdots} = \frac{1}{2}$

d)



Shaded parts = $\frac{\cdots}{\cdots} = \frac{1}{2}$

e)



Shaded parts = $\frac{\cdots}{\cdots} = \frac{1}{2}$

Parents' Tips:

- Give your child two circles with a mark to show the midpoint, then show him/her how to fold the half in half again to make fourths.

Complete the other half of the picture, then color:

- Coloring shapes to generate unconventional halves.

Calculating half the area of a rectangle

How can we calculate half the area of a rectangle?

Akram needs to paint a wall in his room, he wants to paint it equally using 2 colors yellow and blue. The wall is 6 meters by 4 meters. Find the area of the yellow colored part only (half of his wall).

Calculate half the area using 3 ways

First way

- Calculate the whole area:

Area: length × width = $6 \times 4 = 24\ m^2$

Then, half of area = $24 \div 2 = 12\ m^2$

Second way

- Calculate the area using half its length.

3 m　3 m

$\frac{1}{2}$ of 6 m.

which means $6 \div 2 = 3$ m,

- Area = $3 \times 4 = 12\ m^2$

Third way

- Calculate the area using half its width.

2 cm
2 cm

$\frac{1}{2}$ of 4 m.

which means $4 \div 2 = 2$ m,

- Area = $6 \times 2 = 12\ m^2$

Parents' Tips:

- Revise with your child by solving the multiplication and division fact review problems.

Activity 1 Calculate the area in 3 different ways:

a) Dalida wants to buy a new carpet for her dining room. If her dining room is 8 meters by 6 meters rectangular shape and she needs to buy a carpet to cover exactly half of her dining room floor. Find the area of the carpet that she needs to buy.

First way:

Area of the room floor = ... x ....

So, half the area of the room floor = ...

Second way:

- ....
- ....

Third way:

- ....
- ....

b) Reham has a rectangular garden. Her garden is 8 m by 10 m. If she collects exactly half of the roses planted in her garden, find the area occupied by the roses that are left uncollected.

First way

- ....
- ....

Second way

- ....
- ....

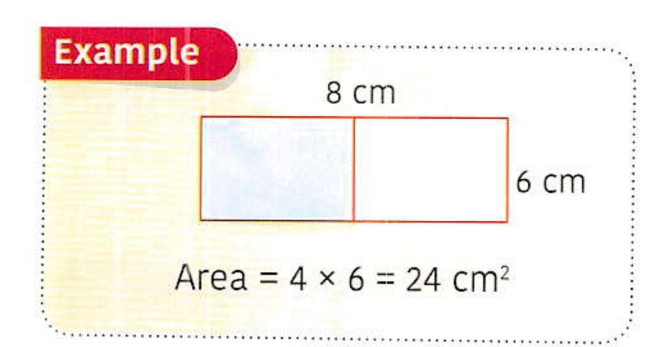
Third way

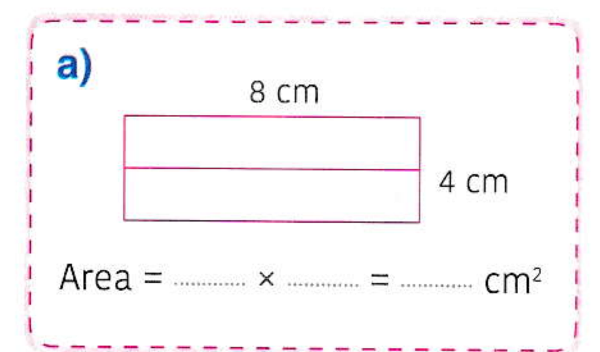
- ....
- ....

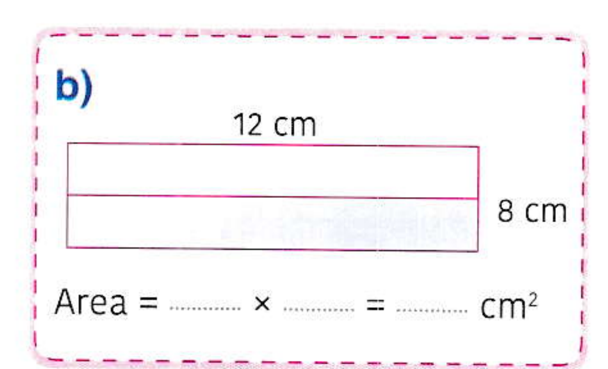
Parents' Tips:

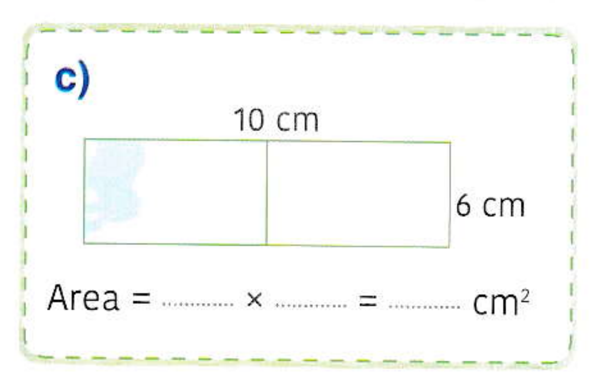
- Encourage your child to draw a line to split the rectangle in half (vertically, horizontally, or diagonally).

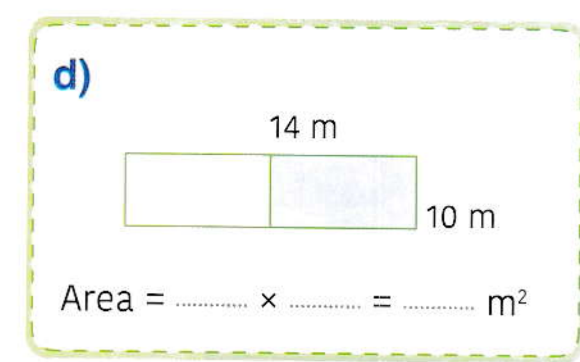
Calculate the area of the colored parts:

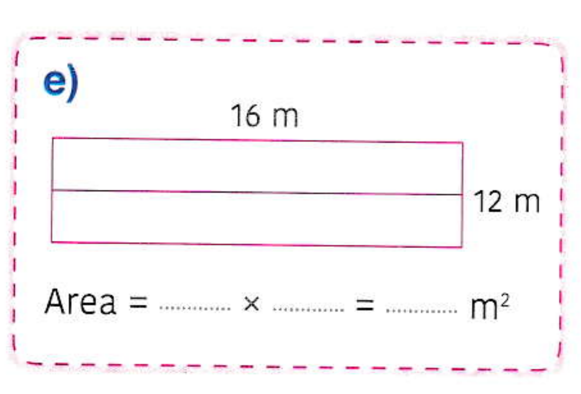


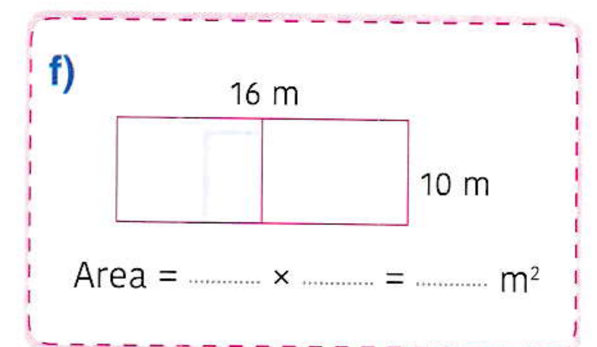


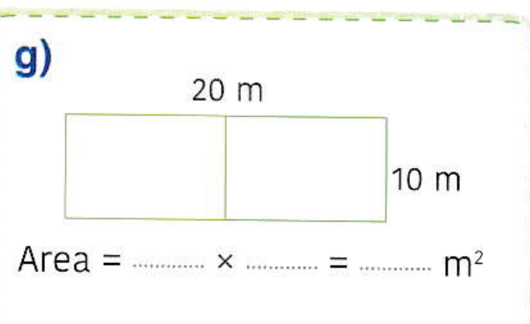












Parents' Tips:

- Help your child to solve the above problems using his/her favorite way.

Read and solve:

Example

Sara was painting with her colors. She told her mom that only half of the colors were left. Do you agree with her?

The total colors are 12 colors

So, $\frac{1}{2}$ of 12 means $12 \div 2 = 6$ colors

- Yes, I agree with her.

a) Ahmed has a chocolate box, he told his father that his brother Yehiya ate half of the chocolate pieces in the box.

Do you agree with him?

The total chocolate pieces are .... pieces.

So; ....

- ....
- ....

b) Dalida was counting her mother's silver spoons, she told her mother that they had used half of the 20 spoons. Do you agree with her?

- ....
- ....
- ....

Parents' Tips:

- Encourage your child to figure out the half of the given problems.

Activity 4 Read, then solve:

Example

Laila has a 50 square meter a rectangular garden. She needs to plant green pepper and tomatoes in 2 equal areas of 5 meters length and 4 meters width. Find the total area of the parts she needs to plant and the area of the parts left in her garden.

First Step: The area of green pepper = Length × width = $5 \times 4 = 20\ m^2$
The area of tomatoes = Length × width = $5 \times 4 = 20\ m^2$

Second Step: Total area of parts she needs to plant = $20 + 20 = 40\ m^2$

Third Step: The area of the parts left in her garden = $50 - 40 = 10\ m^2$

a) Rahim has a 40 square unit rectangular foam sheet. He needs to form small rectangles with 5 units by 3 units. How many small rectangles can he form using his big foam sheet and how many parts will be left?

First Step: Area of one small rectangle = ... × ....

Second Step: The number of small rectangles he can form = ...

Third Step: The left part of the foaming sheet = ...

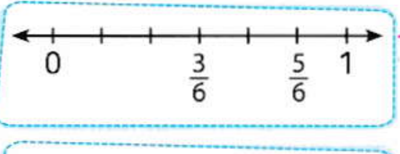
I learned

- Applying area and fractions.

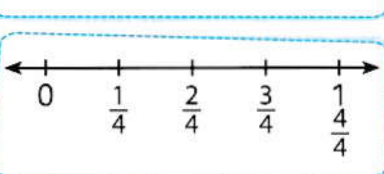
Ordering fractions on the number line

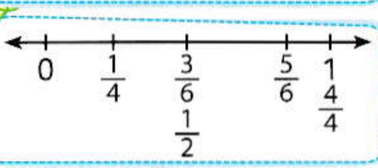
How can we put $\frac{3}{6}$, $\frac{2}{4}$, $\frac{4}{4}$, $\frac{5}{6}$ in the correct order on the number line?

We divide the number line into 6 equal parts as the denominator is 6.



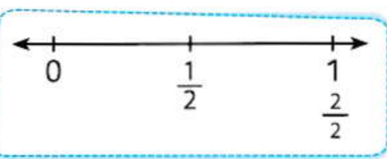
We will divide the number line into 4 equal parts as the denominator is 4.



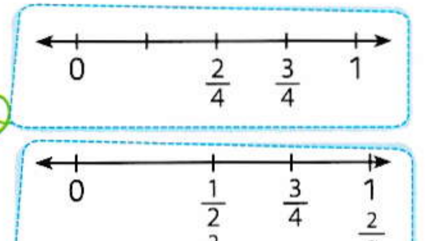


How can we put $\frac{1}{2}$, $\frac{3}{4}$, $\frac{2}{2}$, $\frac{2}{4}$, in the correct order on the number line?

We divide the number line into 2 equal parts.



We divide the number line into 4 equal parts.



- $\frac{1}{2} = \frac{2}{4}$, $1 = \frac{2}{2} = \frac{4}{4}$ these are equivalent fractions.
- Ordering fractions on the number line shows the large fractions that are closer to 1.

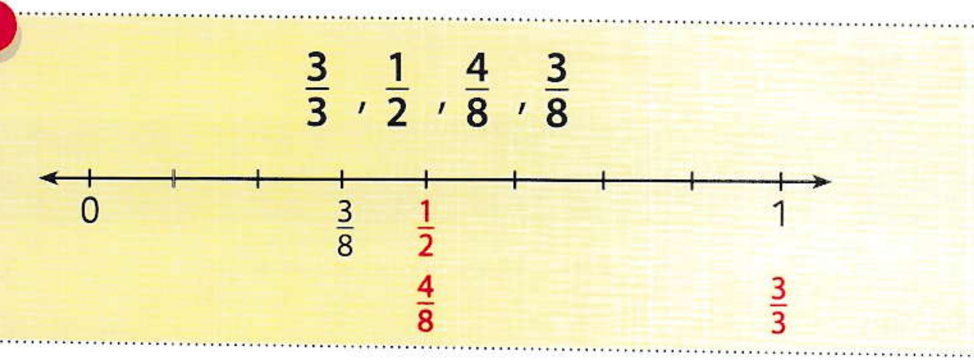
Connect:

- Revise with your child by playing Skip Counting game: he/she can play in pairs. Each pair receives one die or a set of number cards 0 to 12. One partner rolls the die or picks a card. The second partner states the first 12 multiples of the selected number.

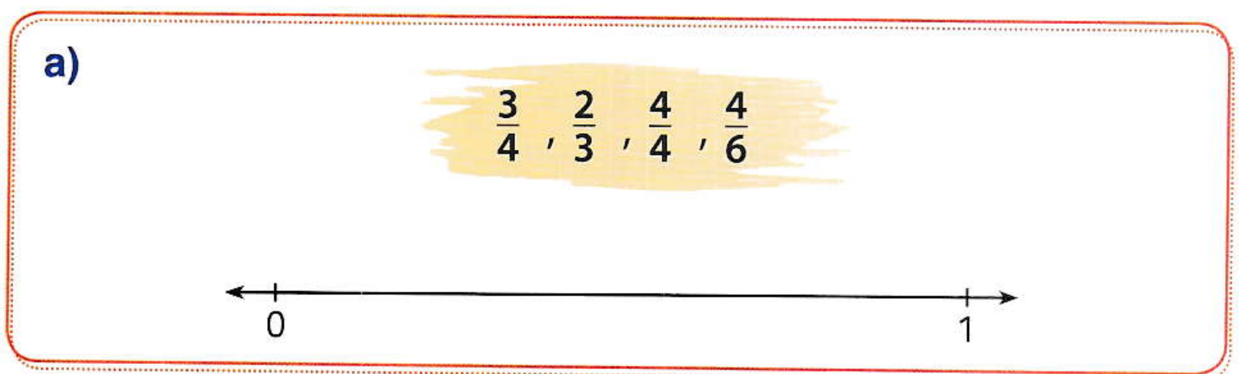
Activity 1

Order the following fractions on the number line:

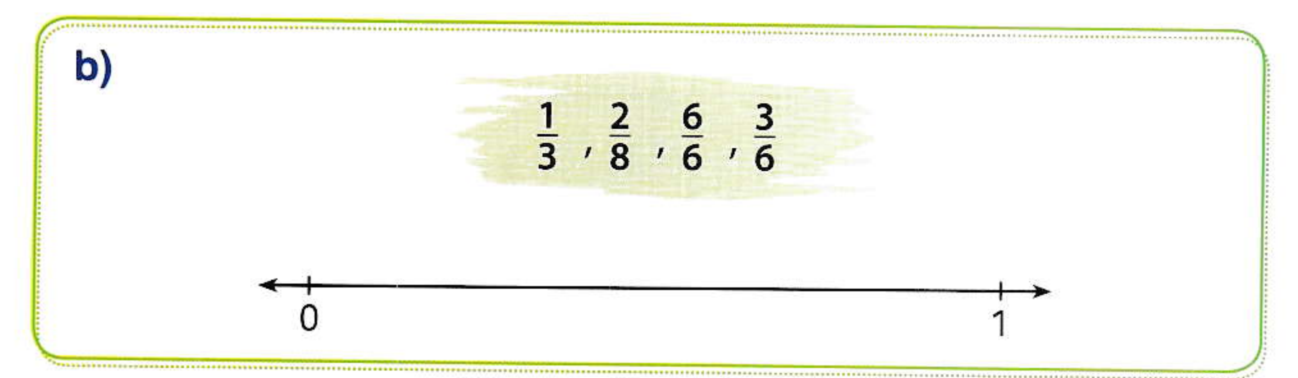
Example



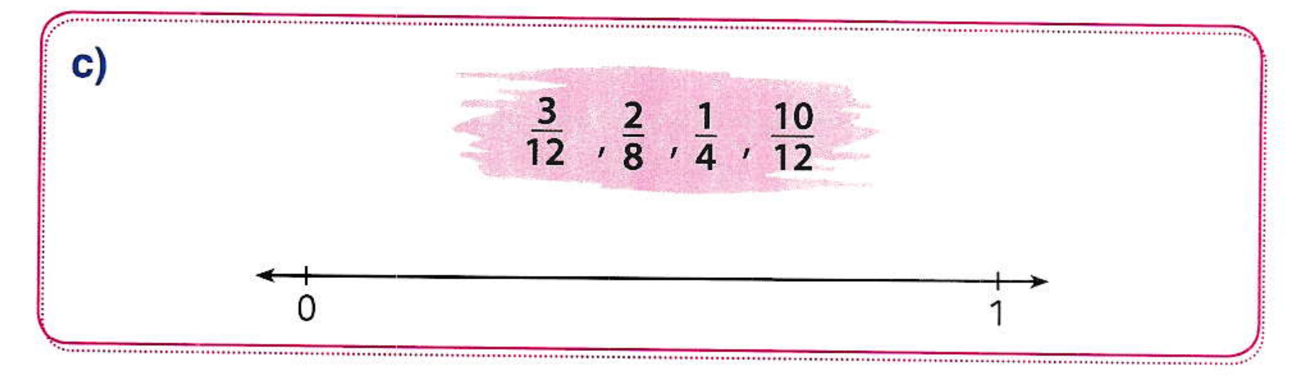
a)



b)



c)



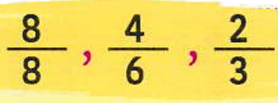
Parents' Tips:

- Practice with your child locating the given fractions correctly on the number line.

Activity 2

Tick (✓) the number line that shows the given fractions in the correct order:

Example

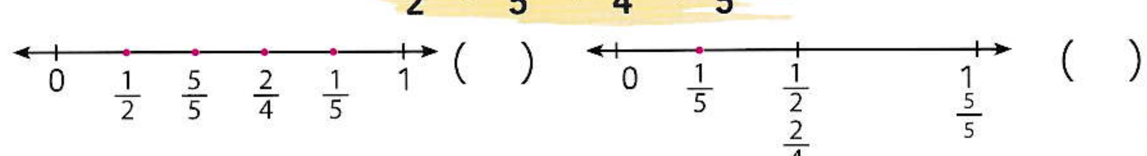


$\frac{8}{8}$, $\frac{4}{6}$, $\frac{2}{3}$

Number line: 0, $\frac{1}{2}$, $\frac{2}{3}$ / $\frac{4}{6}$, 1 / $\frac{8}{8}$ (✓)

Number line: 0, $\frac{4}{6}$, $\frac{2}{3}$, $\frac{8}{8}$, 1 ( )

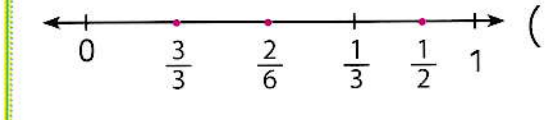
a) $\frac{1}{2}$, $\frac{5}{5}$, $\frac{2}{4}$, $\frac{1}{5}$



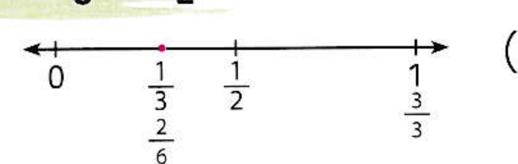
Number line: 0, $\frac{1}{2}$, $\frac{5}{5}$, $\frac{2}{4}$, $\frac{1}{5}$, 1 ( )

Number line: 0, $\frac{1}{5}$, $\frac{1}{2}$ / $\frac{2}{4}$, 1 / $\frac{5}{5}$ ( )

b) $\frac{1}{3}$, $\frac{2}{6}$, $\frac{3}{3}$, $\frac{1}{2}$



Number line: 0, $\frac{3}{3}$, $\frac{2}{6}$, $\frac{1}{3}$, $\frac{1}{2}$, 1 ( )

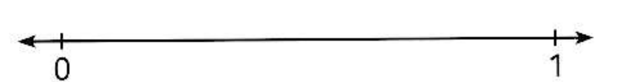


Number line: 0, $\frac{1}{3}$ / $\frac{2}{6}$, $\frac{1}{2}$, 1 / $\frac{3}{3}$ ( )

Activity 3

Place the following fractions on the number line in the correct order:

a) $\frac{1}{3}$, $\frac{2}{8}$, $\frac{6}{8}$, $\frac{12}{12}$



0 ———————— 1

b) $\frac{3}{6}$, $\frac{1}{4}$, $\frac{7}{8}$, $\frac{2}{8}$

0 ———————— 1

c) $\frac{6}{12}$, $\frac{2}{8}$, $\frac{1}{4}$, $\frac{10}{12}$

0 ———————— 1

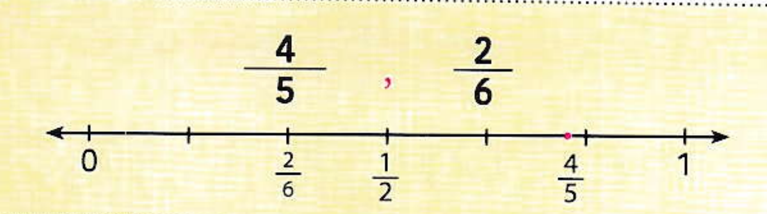
Parents' Tips:

- Help your child to find the correct number line with the right order.

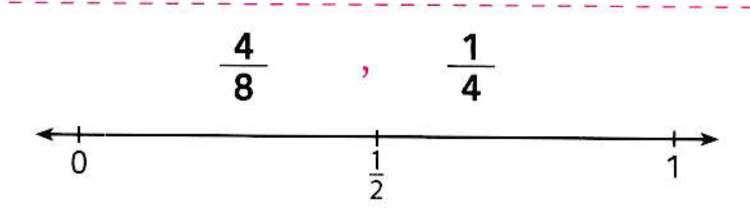
Activity 4

Put the given fractions in the correct location on the number line:

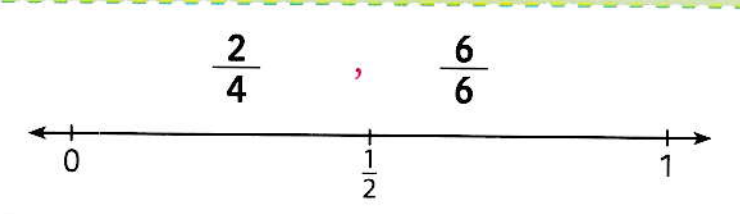
Example



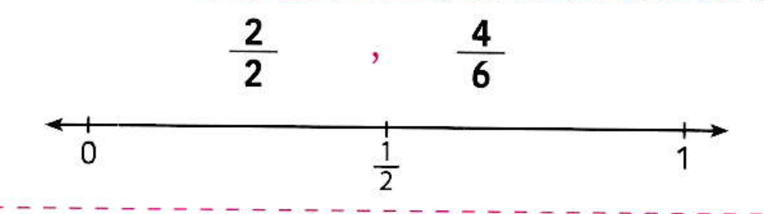
a)



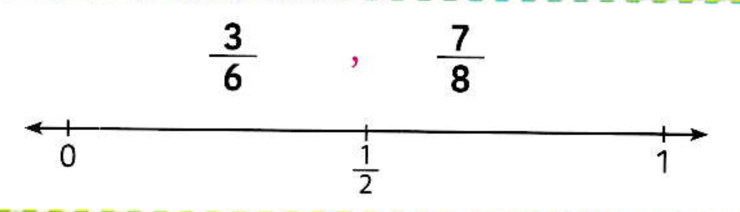
b)



c)

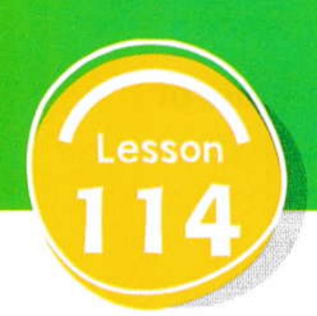


d)



I learned

- Ordering fractions on the number line.



The place value

How can we represent the number 354,219 in different forms?

1 Word form

The number written in words (start reading from the left side).

- Three hundred fifty four thousand two hundred and nineteen.

2 Standard form

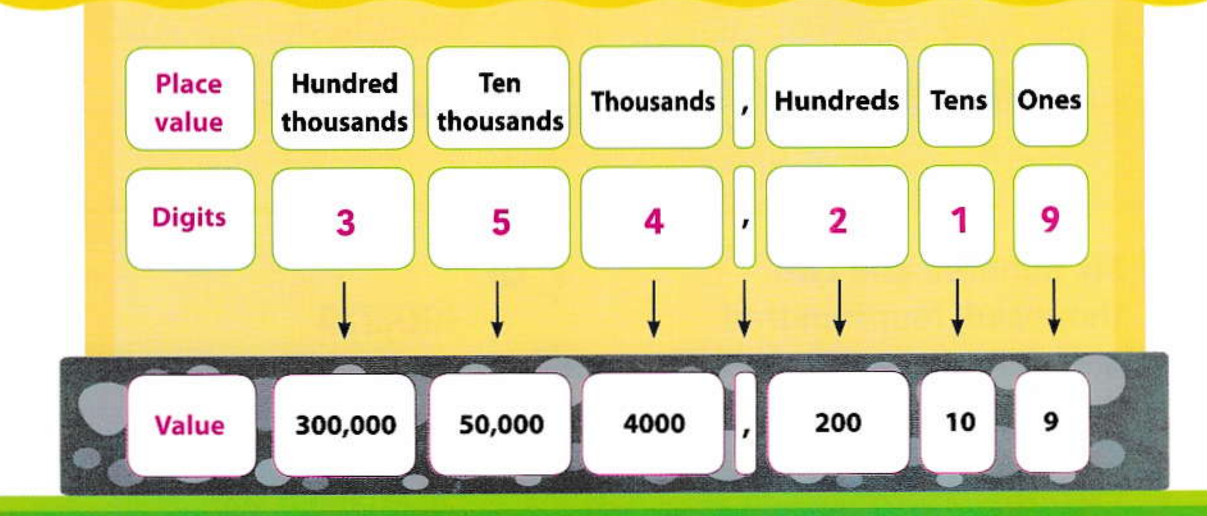
The number written just with its digits.

354 , 219

3 Expanded form

The number written with the value of each digit added together.

300,000 + 50,000 + 4000 + 200 + 10 + 9



Thousands family

Place value	Hundred thousands	Ten thousands	Thousands	,	Hundreds	Tens	Ones
Digits	3	5	4	,	2	1	9
Value	300,000	50,000	4000	,	200	10	9

Connect:

- Revise with your child by playing Number Battle game: by getting a deck of number cards from 0 to 12. Both decks are placed with side number down, then turn over their top two cards and multiply them to find the product. Whoever has the greater product takes all four cards and continues until one player has no cards. Then, he/she reshuffles and plays again until time is up.

Activity 1

Write down the value and the place value of 7 in each of the following numbers:

a) 1,897

value: ....

place value: ....

b) 37,661

value: ....

place value: ....

c) 745,220

value: ....

place value: ....

d) 579,111

value: ....

place value: ....

Activity 2

Complete as required:

a) 3620

Word form: ....

Expanded form: ....

b) 40000 + 0 + 2000 + 500 + 0

Word form: ....

Standard form: ....

c) Six hundred and two thousand, four hundred and seventy-seven.

Standard form: ....

Expanded form: ....

d) 300,279

Word form: ....

Expanded form: ....

Parents' Tips:

- Ensure that your child places the comma in the standard form when he/she reads the number.

How can we write 3 hundreds + 40 tens + 8 ones in the standard form?

First:

- We need to express the words in digits: 300 + 400 + 8

Second:

- Add to convert the expanded form into a standard form.

The standard form is 708

Read as : Seven hundred and eight

	Hundreds	Tens	One
	3	0	0
+	4	0	0
			8
	7	0	8

Remember

Thousands has 3 Zeroes	Hundreds has 2 Zeroes	Tens has 1 Zero	Ones has No Zero

Activity 3 Write the following in standard form:

Example

50 hundreds = 5000

a) 700 tens = ...

b) 38 tens = ...

c) 68 thousands = ...

d) 20 tens = ...

e) 400 hundreds = ...

f) 2 hundreds + 32 tens + 17 ones = ...

g) 45 tens + 20 ones + 50 hundreds = ...

h) 6 thousands + 30 hundreds + 50 tens = ...

Parents' Tips:

- Ensure that your child places the word thousands with 3 zeroes, hundreds with 2 zeroes, tens with one zero.

Activity 4 Who am I?

a) I have 1 in my thousands place, 6 in my hundreds place, 4 in my tens place and 9 in my ones place.

a) **1,694** b) **376**

c) **1,649** d) **23**

b) I have 2 in my hundred thousands place, 0 in my ten thousands place, 1 in my thousands place, 3 in my hundreds place and 7 in both tens and ones place.

a) **20,773** b) **2377**

c) **201,377** d) **201,737**

c) I have 3 in my ten thousands place, 9 in my thousands place, 6 in my hundreds place, 0 in my tens place and 8 in my ones place.

a) **93,800** b) **39,880**

c) **93,808** d) **39,608**

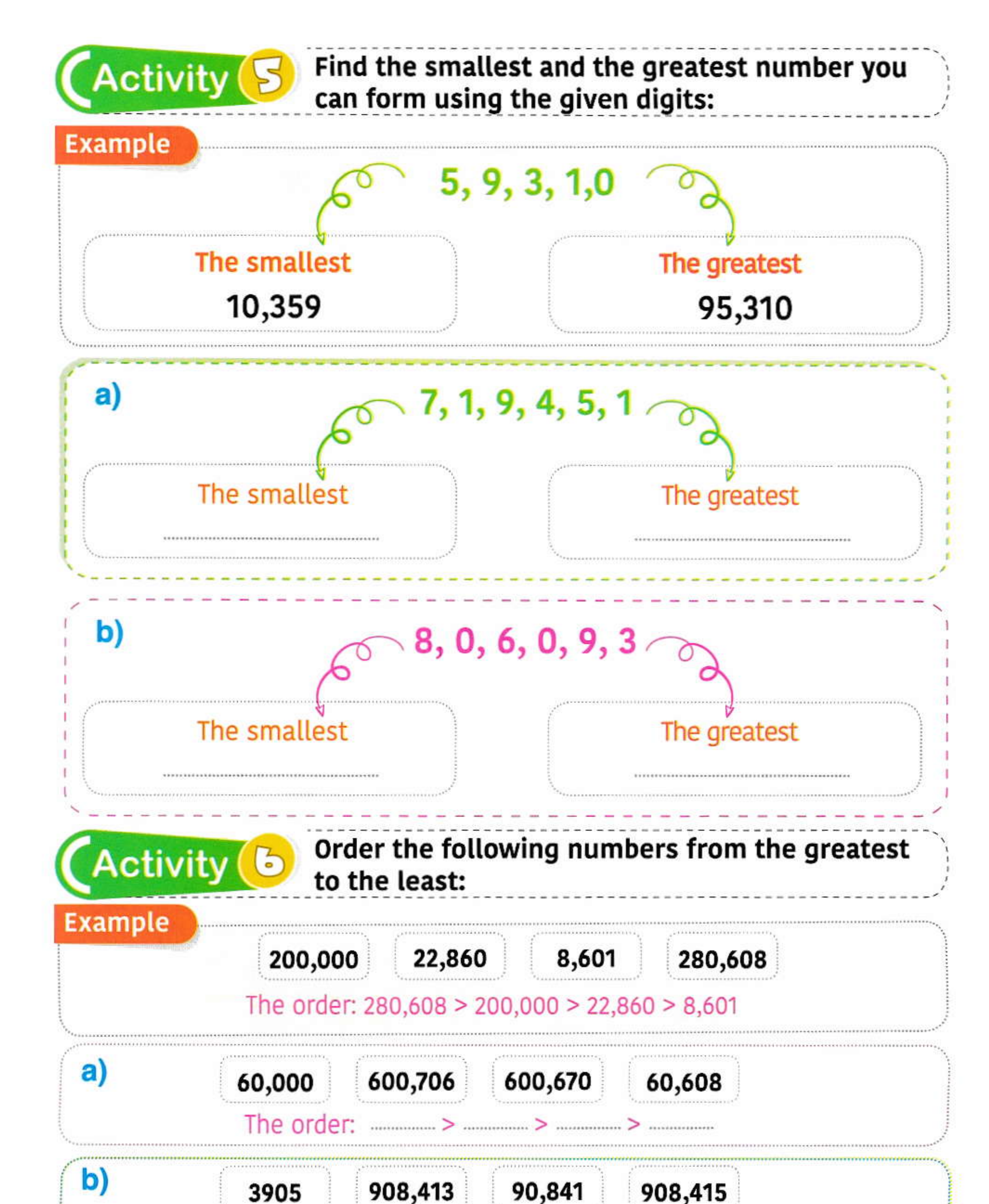
d) The product of 3 times 1 is in my thousands place, my hundreds place is the difference between 9 and 3, my tens place is 7 and put 0 in my ones place.

a) **2,370** b) **4,670**

c) **3,706** d) **3,670**

Parents' Tips:

- Ensure that your child recognizes that in each family there are 3 places before the comma.



Activity 5 Find the smallest and the greatest number you can form using the given digits:

Example

5, 9, 3, 1,0

The smallest	The greatest
10,359	95,310

a) 7, 1, 9, 4, 5, 1

The smallest	The greatest
....	....

b) 8, 0, 6, 0, 9, 3

The smallest	The greatest
....	....

Activity 6 Order the following numbers from the greatest to the least:

Example

200,000 22,860 8,601 280,608

The order: 280,608 > 200,000 > 22,860 > 8,601

a) 60,000 600,706 600,670 60,608

The order: .... > .... > .... > ....

b) 3905 908,413 90,841 908,415

The order: .... > .... > .... > ....

Parents' Tips:

- Help your child to arrange the numbers above.

Activity 7

Order the following numbers from the least to the greatest:

a) 435,010 | 453,010 | 45,000 | 54,010

Order: .... < .... < .... < ....

b) 66,728 | 661,700 | 710,205 | 60,218

Order: .... < .... < .... < ....

c) 205,911 | 25,370 | 25,118 | 250,911

Order: .... < .... < .... < ....

Activity 8

Write the following in a standard form:

Example

218,801 — 218 thousands, 8 hundreds, 1 ones

a) .... 15 thousands, 7 tens, 9 ones

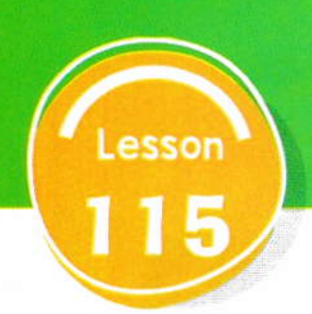
b) .... 32 thousands, 8 ones

c) .... 18 tens, 600 thousands, 2 ones

d) .... 19 hundreds, 8 ones

I learned

- Solving place value problems.



Elapsed time

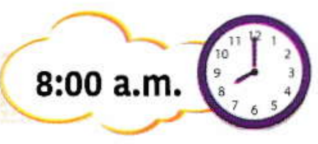
How can we solve elapsed time problems?

Wake up at 7:00 a.m.

Leave for school at 8:00 a.m.

Zein woke up at 7:00 a.m. He left for school at 8:00 a.m. It took him 15 minutes to have breakfast, 10 minutes to brush his teeth and 10 minutes to pack his bag. If he wanted to do 15-minute morning exercises, would he have enough time before leaving for school?

(15 min. + 10 min. + 10 min.)



- From 7:00 a.m. till 8:00 a.m. there are 60 minutes.
- He needs 15 minutes to do morning exercises.

35 min. + 15 min. = 50 min.

- Zein would have enough time to do morning exercises before school time.

Elapsed time:

is determining how much time has elapsed (past) between two given times or two analog clocks.

Parents' Tips:

Revise with your child by playing Share the Counters game:

- By writing three division equations, then use counters to solve the problem, record the equation, and make a drawing to show the quotient.

Let's review on time:

- A.m. stands for times that are in the morning.
- A.m. starts at 12 midnight until 11:59 in the morning.

- P.m. stands for the evening times.
- P.m. starts at 12 noon until 11:59 at night.

- There are 24 hours in 1 day.
- 12 hours for a.m.
- 12 hours for p.m.

- There are 60 minutes in 1 hour.
- 30 minutes in half an hour.
- 15 minutes in quarter of an hour.
- 20 minutes in third of an hour.

Activity 1 Complete to find how much time has elapsed:

Example

6:30 a.m. → 7:00 a.m.

30 minutes passed

a) 4:30 p.m. → 9:00 p.m.

.... passed

b) 11:15 a.m. → 5:30 p.m.

.... passed

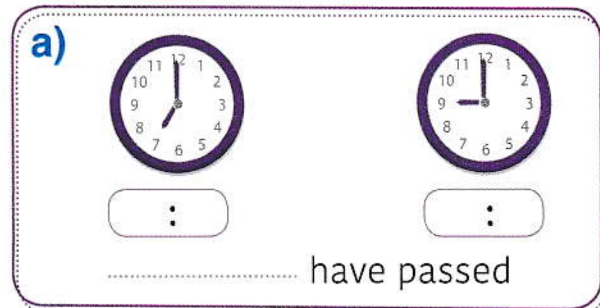
c) 8:20 a.m. → 12:00 p.m.

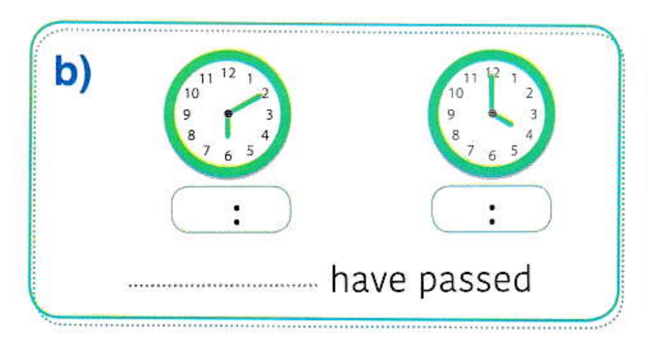
.... passed

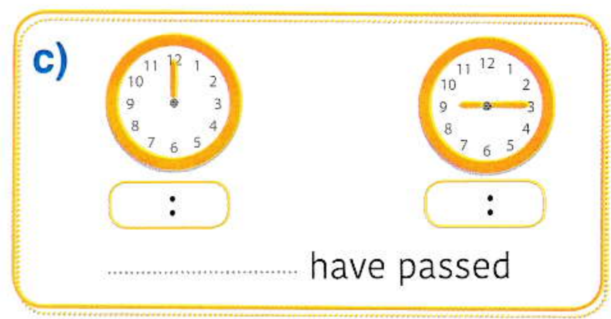
Parents' Tips:

- Ensure that your child remembers that the day has 24 hours, the hour has 60 minutes, and the minute has 60 seconds.

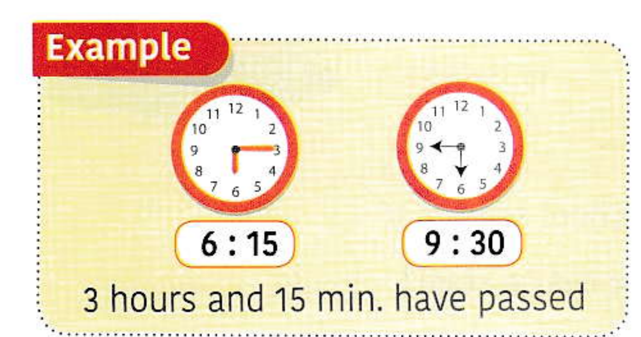
Look at the clocks, write the time, then determine the time that has been elapsed between the two times:

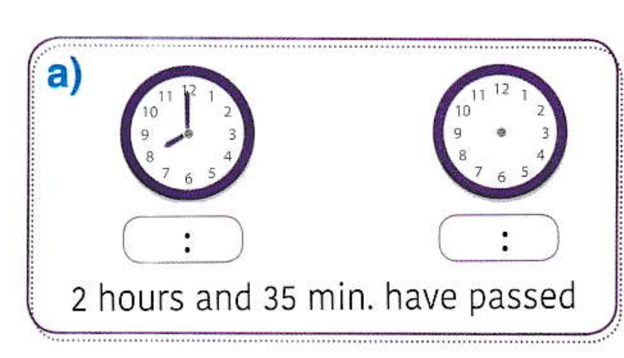


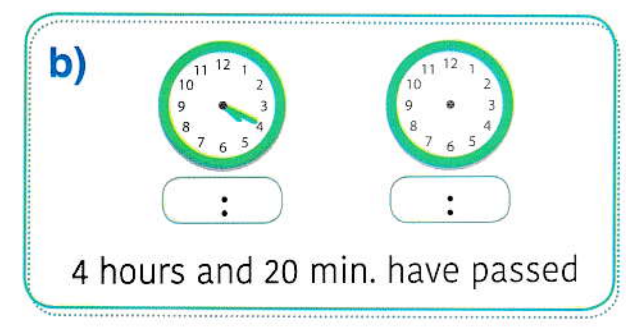


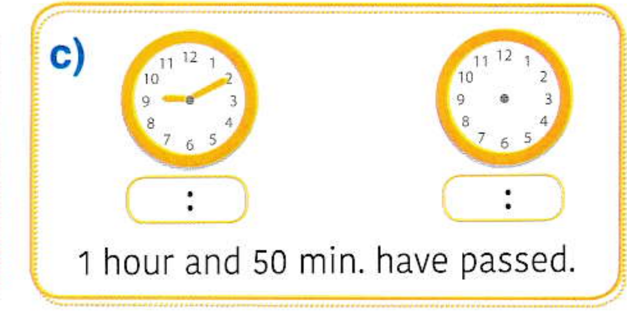


Draw the two hands of the clock to show the time that has been elapsed:









Parents' Tips:

- Help your child to draw the hands of the clock to show the starting and the ending time of the examples above.

Activity 4 Read, then solve:

Example

Salma went for a walk, she left at 8:30 a.m and came back home at 11:45 a.m. How long did it take her to go for a walk?

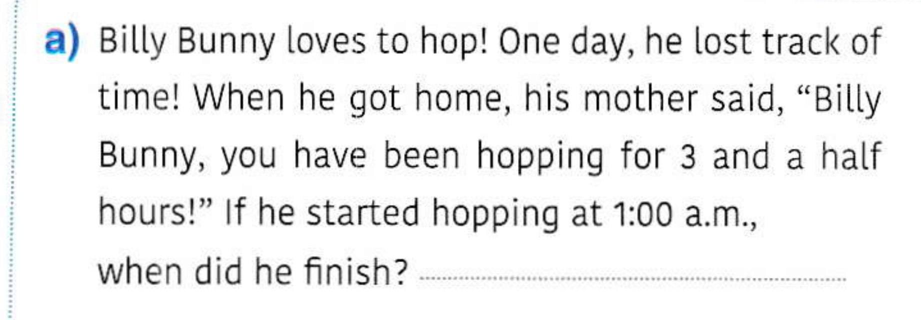
The time = Starting time 8:30 → 9:30 → 10:30 → 11:30

Total hours = 3 hours

minutes → 11:30 → 11:45

Total minutes = 15 minutes

The time she took is 3 hours and 15 minutes.



a) Billy Bunny loves to hop! One day, he lost track of time! When he got home, his mother said, "Billy Bunny, you have been hopping for 3 and a half hours!" If he started hopping at 1:00 a.m., when did he finish? ....

....

b) Khaled spent 2 hours working on a school project. If he finished at 5:10 p.m., at which time did he start?

He started at: ....

....

....

....

....

Parents' Tips:

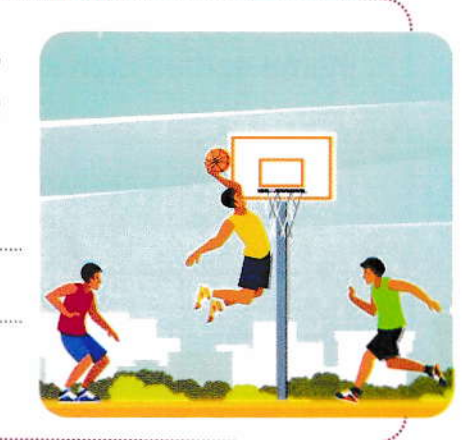
- Help your child to read carefully the examples above to find the elapsed time.

c) The birds began chirping at 3:47 a.m. They chirped for 2 hours. At what time did they finish chirping?

....

....

d) The basketball game started at 7:05 p.m., it ended at 9:15 p.m. For how long was the basketball game?



....

....

Complete the following table:

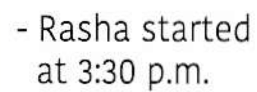
Start Time	End Time	Elapsed Time
....	12:33 P.M.	1 hours & 33 minutes
....	7:35 A.M.	3 hours & 15 minutes
3:00 A.M.	4:34 A.M.	....
....	10:34 P.M.	2 hours & 34 minutes
9:40 P.M.	....	4 hours & 44 minutes

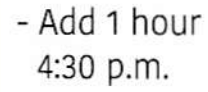
Read, then answer:

Example

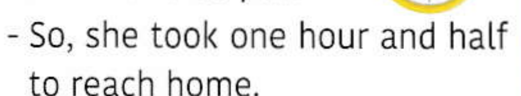
Kamal had a football practice and Rasha had a ballet class. Kamal started at 3:30 p.m., he walked for 10 minutes, practiced for an hour and half, and then he walked for 20 minutes home. While Rasha started at 3:30 p.m., she walked for 10 minutes, practiced for an hour and then she walked 20 minutes home, how many minutes did it take Rasha to reach home earlier than Kamal?

- Kamal started at 3:30 p.m.
- Add 1 hour 4:30 p.m.
- Add half an hour 5:00 p.m.
- Total minutes:
  10 min. + 20 min. = 30 min.
- So, Kamal reaches home at 5:30 p.m.
- So, he took 2 hours to reach home.





- Rasha started at 3:30 p.m.
- Add 1 hour 4:30 p.m.
- Total minutes:
  10 min. + 20 min. = 30. min.
- So, Rasha reaches home at 5:00 p.m.
- So, she took one hour and half to reach home.

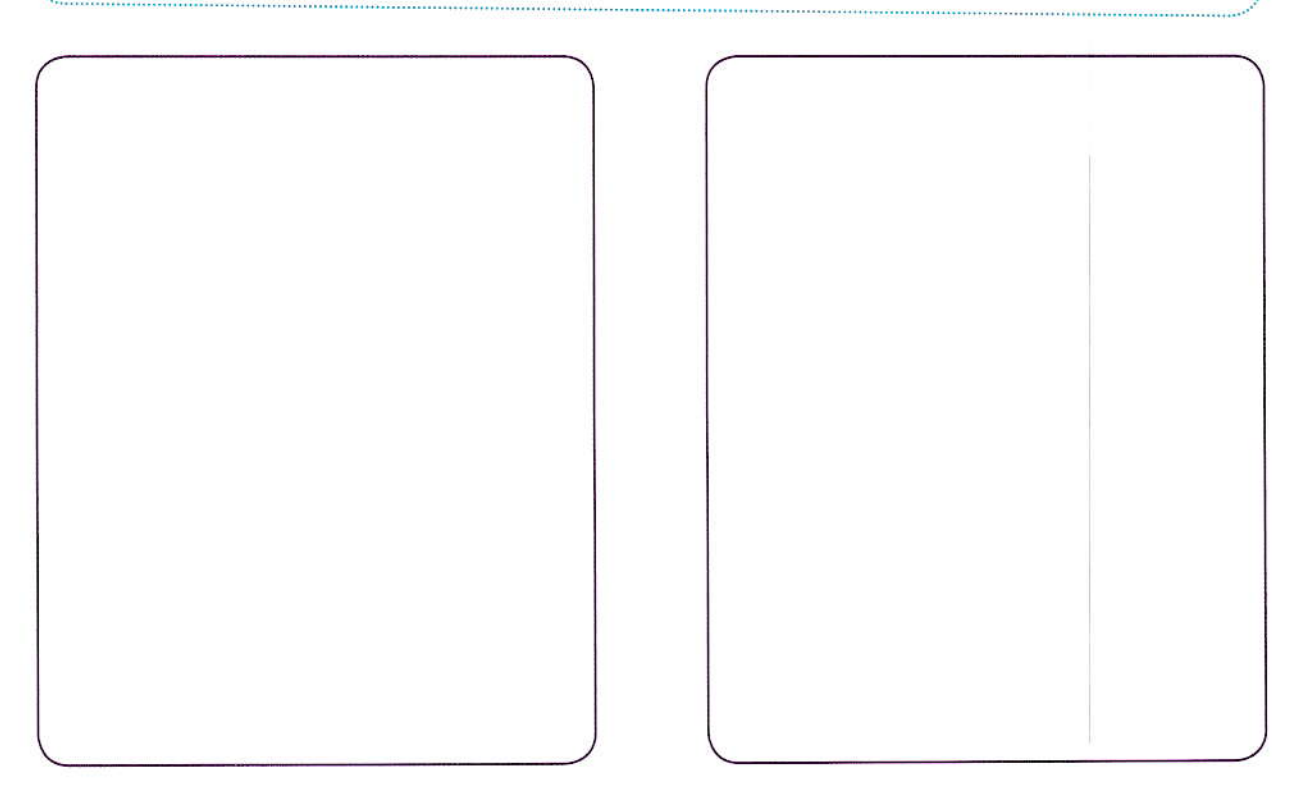


She was 30 min. earlier than Kamal.

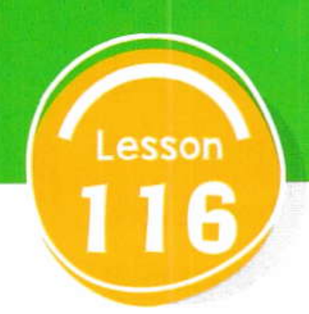
Parents' Tips:

- Help your child to read the problem carefully to learn how to compare between the two elapsed times.

a) Sara got home from school and started her homework at 5:00 p.m. It took her 22 minutes to do her science homework, 30 minutes to read an Arabic lesson and 18 minutes to do her math homework. Mostafa also had the same homework and started at 5:00 p.m. It took him 15 minutes to do his science homework, 20 minutes to read an Arabic lesson and 11 minutes to do his math homework. How many minutes did Mostafa take to finish his work earlier than Sara?

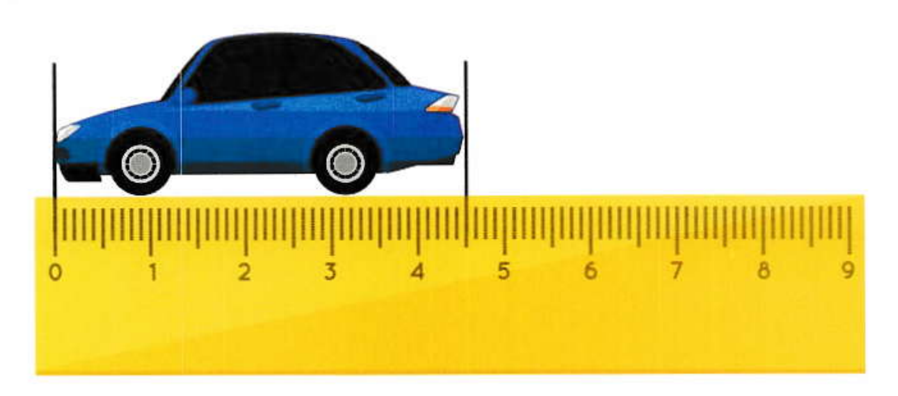


- Solving elapsed-time problems.



Measuring length

How can we measure the length of a toy car using the ruler?



Step 1: Line up the edge of the ruler with the end of the toy car.

Step 2: We read the measurement starting from the left at the 0 mark to the right till we reach the end of the toy car.

Step 3: If we found that the end of the toy car falls exactly between 4 cm and 5 cm,
(record the measurement as a fraction).
- The length of the toy car is $4\frac{1}{2}$ cm.

The ruler is a mathematical tool that gives us an accurate measurement.

Connect:

- Revise with your child by playing Word Wizards game by writing two or three story problems and work together to solve them. The problems can be all multiplication, division or combination.

Record the measurement of each object in centimeters:

Example

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

$18\frac{1}{2}$ cm

a) .... cm

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

b) .... cm

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

c) .... cm

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

d) .... cm

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Parents' Tips:

- Let your child recognizes that if the measurement of any object lies halfway between two numbers, he/she must use a fraction to record an accurate measurement.

Activity 2

Draw colored lines to show the measurement on the ruler:

Example

$5\frac{1}{2}$ cm

a)

8 cm

b)

$4\frac{1}{2}$ cm

c)

$9\frac{1}{2}$ cm

d)

$2\frac{1}{2}$ cm

Parents' Tips:

- Encourage your child to record the measurements above in order from the shortest to the longest.

How can we use a line plot to record the data about the cotton candy measurements?

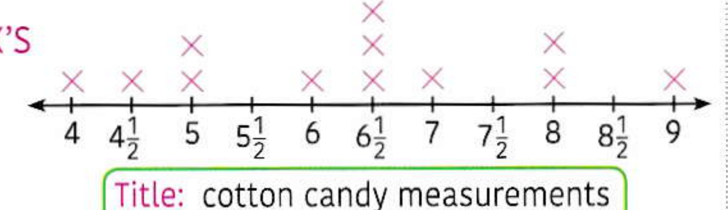
Blue cotton candy	6 cm	$4\frac{1}{2}$ cm	$6\frac{1}{2}$ cm
Pink cotton candy	5 cm	$6\frac{1}{2}$ cm	$6\frac{1}{2}$ cm
Green cotton candy	8 cm	7 cm	5 cm
Purple cotton candy	4 cm	8 cm	9 cm

Step 1:

Order the data on the line plot from the 4 cm measurement till you reach the 9 cm measurement.

Step 2:

Write each measurement as X'S to represent how many times each measurement exists.



Find the answer:

- How many cotton candy sticks are taller than 6 cm? 7 cotton candies
- What is the most frequent measurement? $6\frac{1}{2}$ cm
- How many cotton candy sticks are shorter than 7 cm? 8 cotton candies

Parents' Tips:

- Make sure that your child remembers the three graphs that help him/her to show data or information, and that line plots are a quick way to show the frequency of data (how often a data point occurs) on a number line using X's.

Use the following measurements of the flowers to form a line plot:

Color	Measurements		
Red flowers	10 and half cm	10 cm	11 and half cm
Blue flowers	9 cm	11 cm	9 and half cm
White flowers	10 and half cm	10 cm	8 cm
Purple flowers	11 cm	11 and half cm	8 and half cm

Title: ....

Key: Each x's represents ....

Answer the following questions:

a) How many flowers are taller than 10 cm?

....

b) How many flowers are shorter than 11 and half cm?

....

c) What is the most frequent measurement?

....

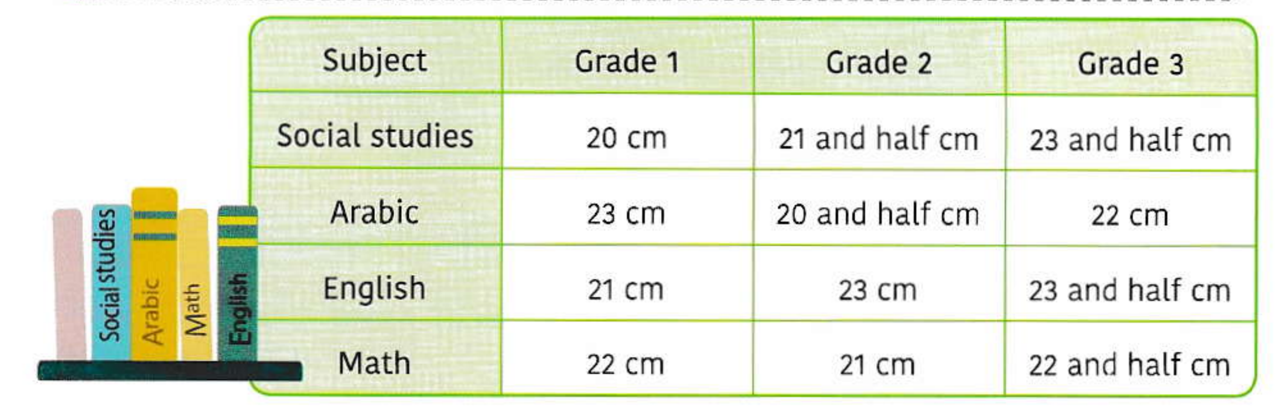
d) What is the least frequent measurement?

....

Parents' Tips:

- Ensure that your child records the measurement using fractions and if he/she is able to interpret the data on the line plot.

Use the following measurements of books to form a line plot:



Subject	Grade 1	Grade 2	Grade 3
Social studies	20 cm	21 and half cm	23 and half cm
Arabic	23 cm	20 and half cm	22 cm
English	21 cm	23 cm	23 and half cm
Math	22 cm	21 cm	22 and half cm

Title: ....

Key: Each x's represents ....

Answer the following questions:

a) How many books are taller than 21 cm?

....

b) How many books are shorter than 23 and half cm?

....

c) What is the most frequent measurement?

....

d) What is the least frequent measurement?

....

- Measuring objects to the nearest half centimeter.
- Using measurement data to make line plots.
- Analyzing line plots to answer questions about the data.

Graphs

Can we collect the data and represent them by creating both line plot and bar graph?

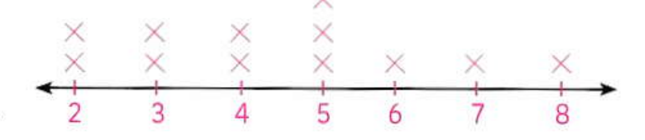
The coach kept track of the number of laps of the players in his team during three days and recorded the results in the table:

Name of player	Tallies		
	First day	Second day	Third day
Karim	//	卌	///
Anwar	卌/	//	////
Hossam	卌	////	///
Sherif	卌	卌 ///	卌 //

Create a line plot to display the data.

Title: Number of laps.

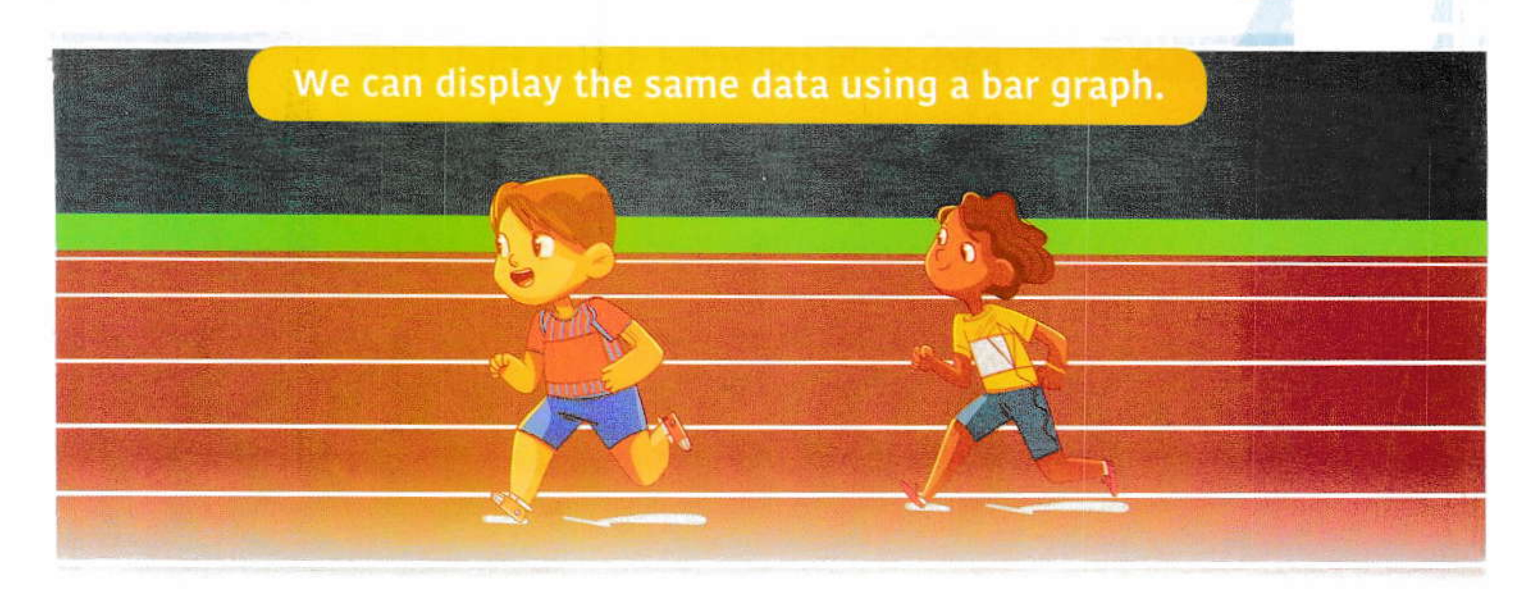
The key: X's represents one player.



Line plot is a type of graph that shows the frequency of a data set. (How many laps did the players make?)

Connect:

- Revise with your child by playing Mystery Multiplication game by telling him/her some factors.
- Then, he/she rolls a die or selects a number card and multiplies the factor by the die roll or number card picked. • **Example:** Factor chosen is 4 and die roll is 5, so he/she solves 4 × 5.



We need to know the total laps for each player to represent them on a bar graph.

Name of player	Tallies of the three days
Karim	𝍸 𝍸
Anwar	𝍸 𝍸 //
Hossam	𝍸 𝍸 //
Sherif	𝍸 𝍸 𝍸 𝍸

We will use the grid to create a bar graph to display the data:

Parents' Tips:

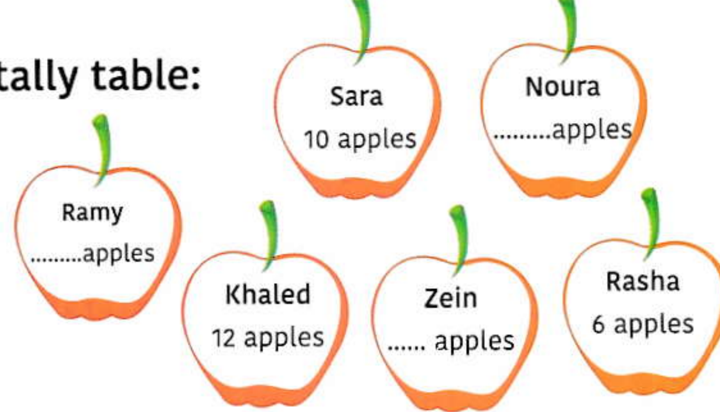
- Ensure that your child understands that the bar graph is a type of graph that shows the data and helps compare between them.

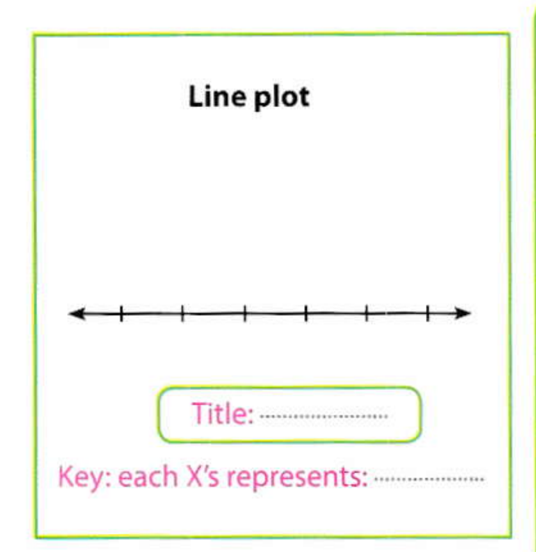
The following data show the number of apples each child collected during their trip:

a) Record the data in the tally table:

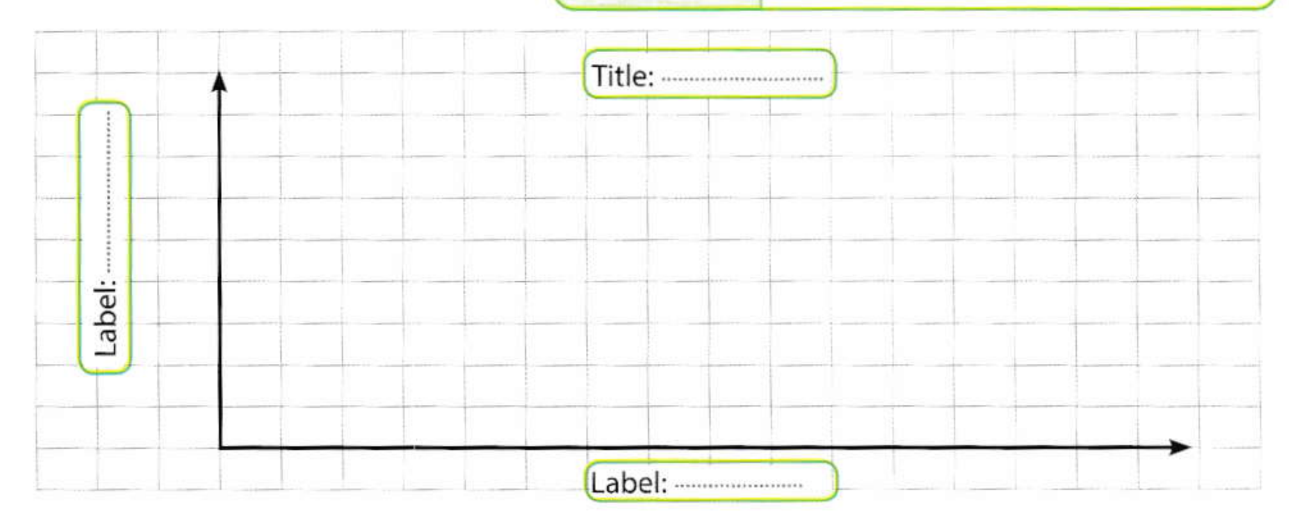
b) Create a line plot:

c) Create a bar graph:





Name	Tallies Number of collected apples
Sara	....
Noura	𝍸 𝍸
Rasha	....
Ramy	𝍸 𝍸 //
Zein	𝍸 𝍸 𝍸
Khaled	....



Parents' Tips:

- Encourage your child to collect some data and then represent that data in more than one way. He / She can use from the three types of graphs.

Collect the following data about the number of teeth that some students have lost during their third grade:

a) Record the data in the tally table:

b) Create a line plot:

c) Create a bar graph:

Hana ....teeth

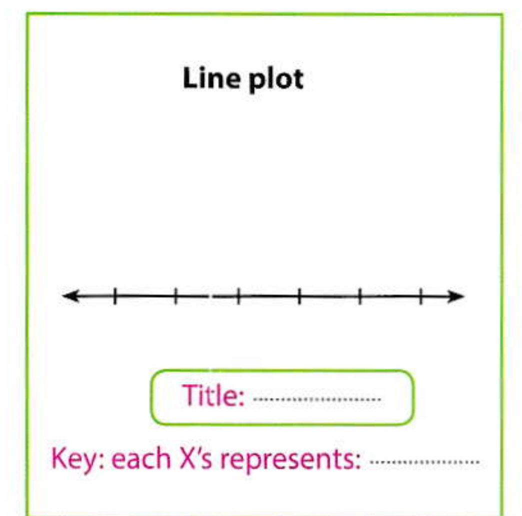
Noha 4 teeth

Ahmed ....teeth

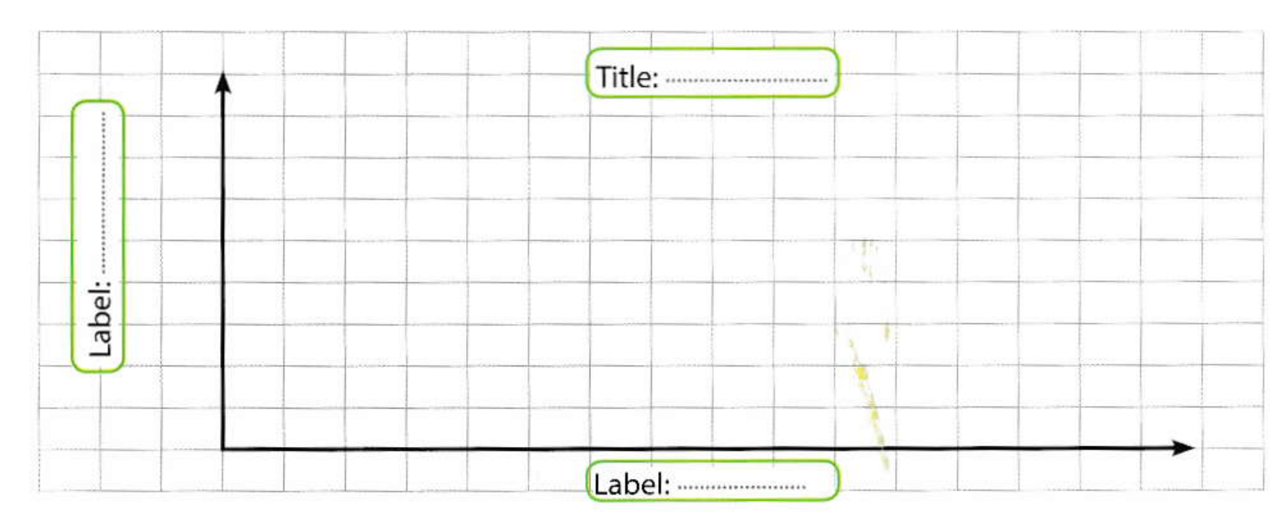
Rana 8 teeth

Reda 8 teeth

Soha 6 teeth



Name	Tallies Number of teeth collected
Hana	////
Rana	....
Noha	....
Reda	....
Soha	....
Ahmed	~~////~~ ///

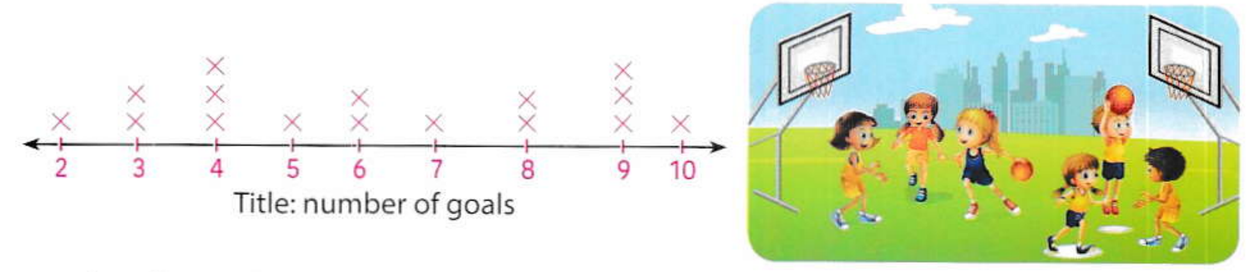


Parents' Tips:

• Ask your child which type of graph he / she thinks shows the data above in the best way and then explain his/ her thinking.

Activity 3

The following data on the line plot show the number of goals scored by some players in a basketball game:



Use the above data on the line plot about the scored goals for some players in a basketball team to answer the following questions:

Example

How many players have recorded an even number of scored goals?

2	4	6	8	10
one player	three players	two players	two players	one player

The number of players = 1 + 3 + 2 + 2 + 1 = 9 players

a) How many players have recorded an odd number of scored goals?

3	5	7	9
.........players	.... players	.... players	.... players

The number of players = ... = ... players

Remember:

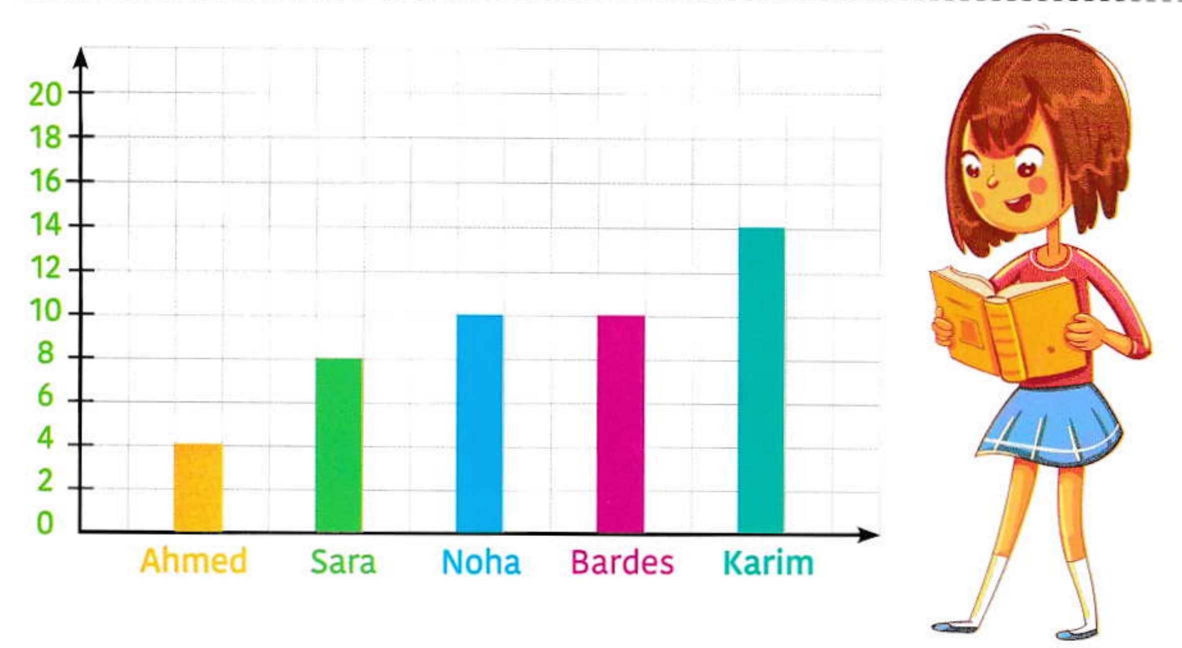
Even numbers are 0, 2, 4, 6, 8, 10, ...

Odd numbers are 1, 3, 5, 7, 9, ...

Parents' Tips:

- Help your child to remember the odd numbers as 1,3,5,7,9,11........ and the even numbers as 0,2,4,6,8,10...... .

Observe, then answer:



The graph above represents the data about the marks of some children during the math test, use these data to answer the following questions:

a) Which students have got 10 marks? ....

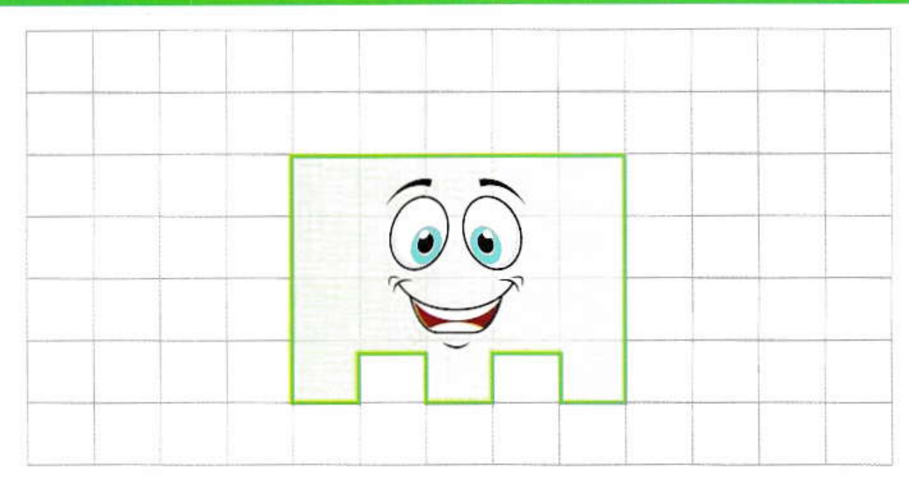
b) The scale that is used to show these data represents (even or odd) .... numbers.

c) Which student has got the smallest mark? ....

- Collecting and recording data in a table.
- Using collected data to make a line plot.
- Using collected data to make a bar graph.
- Analyzing graphs to answer questions about data.

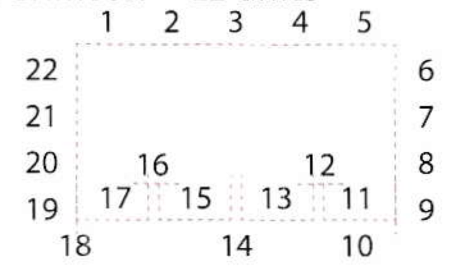
Calculating area and perimeter of irregular shapes

How can we calculate the area and the perimeter of irregular shapes?



Sally was playing a video game, she used a grid to draw the PAC-MAN in the game, how can she calculate the area and the perimeter of this irregular shape?

To calculate the perimeter (add the sides around the shape from outside).
There are 21 sides around the shape.
Perimeter = 22 units



To calculate the area (count the number of units inside the shape). There are 18 units inside the shape.
Area = 18 square units

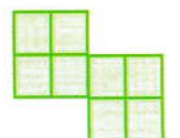
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16		17		18

Connect:

- Revise with your child by multiplying 10's and discussing patterns he/she can observe.

Activity 1 Find the area and the perimeter of each shape:

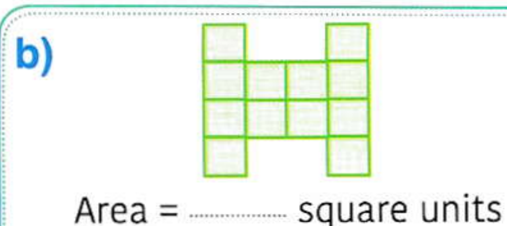
a)



Area = ... square units

Perimeter = ... units

b)



Area = ... square units

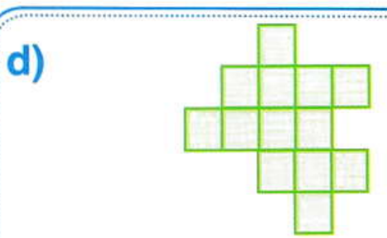
Perimeter = ... units

c)

Area = ... square units

Perimeter = ... units

d)



Area = ... square units

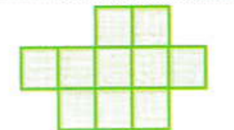
Perimeter = ... units

e)

Area = ... square units

Perimeter = ... units

f)



Area = ... square units

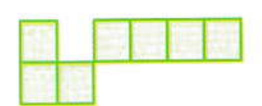
Perimeter = ... units

g)

Area = ... square units

Perimeter = ... units

h)



Area = ... square units

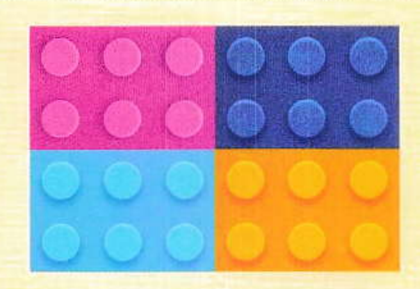
Perimeter = ... units

Parents' Tips:

- Help your child to calculate the area by counting the square units inside the shape.

Find the total area and the total perimeter of the combined shapes:

Example

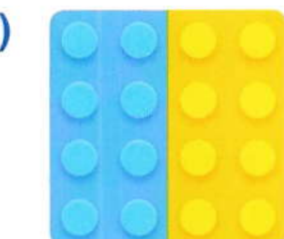


Area = 6 + 6 + 6 + 6 = 24 square units
perimeter = 6 + 4 + 6 + 4 = 20 units

a)

What is the perimeter? ....
What is the area? ....

b)



What is the perimeter? ....
What is the area? ....

c)

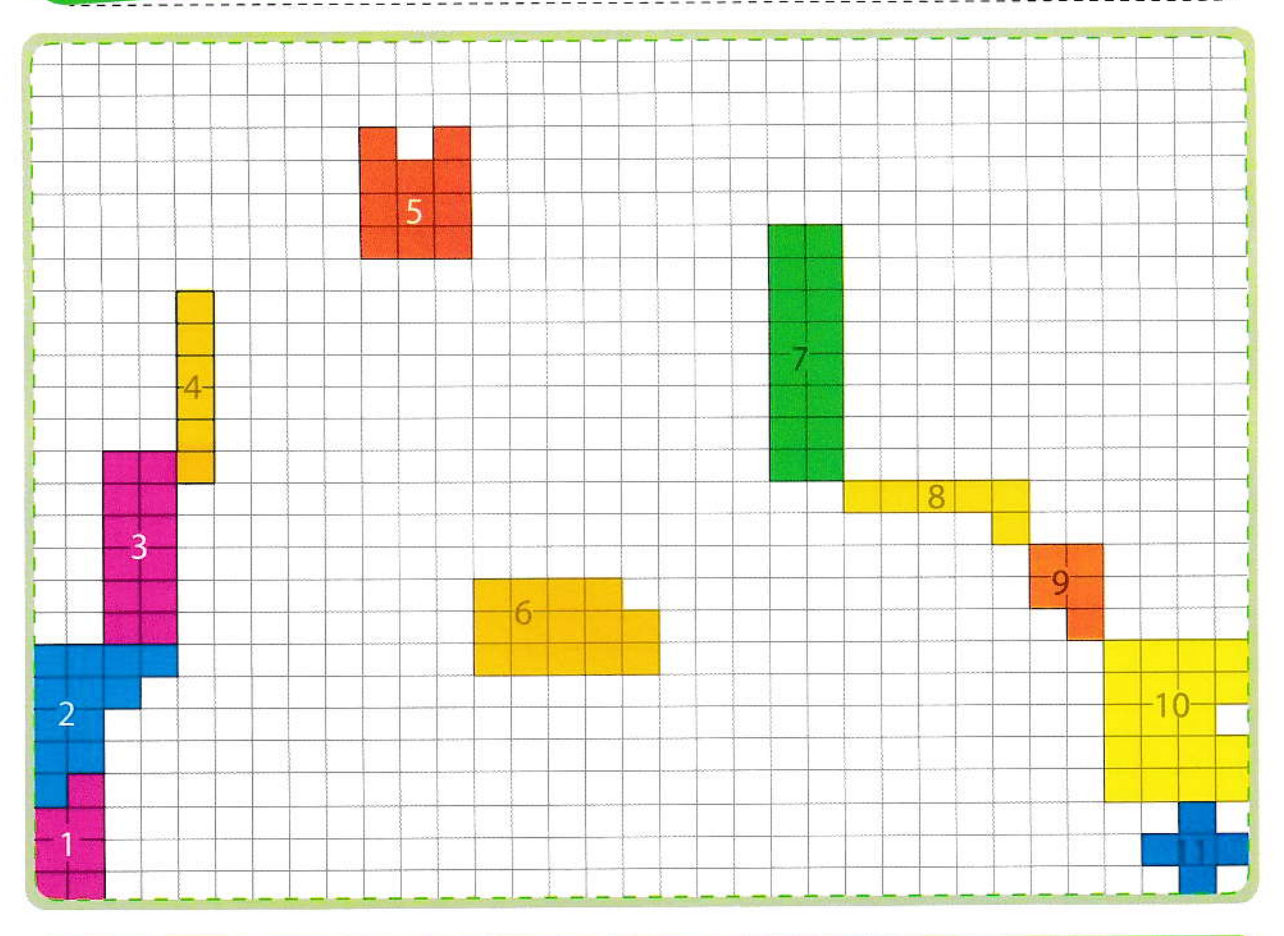
What is the perimeter? ....
What is the area? ....

d)

what is the perimeter? ....
What is the area? ....

Parents' Tips:
- Help your child to calculate the perimeter by counting the sides around the shape from outside.

Find the area and perimeter of the given shapes on the grid, then record them in the table:

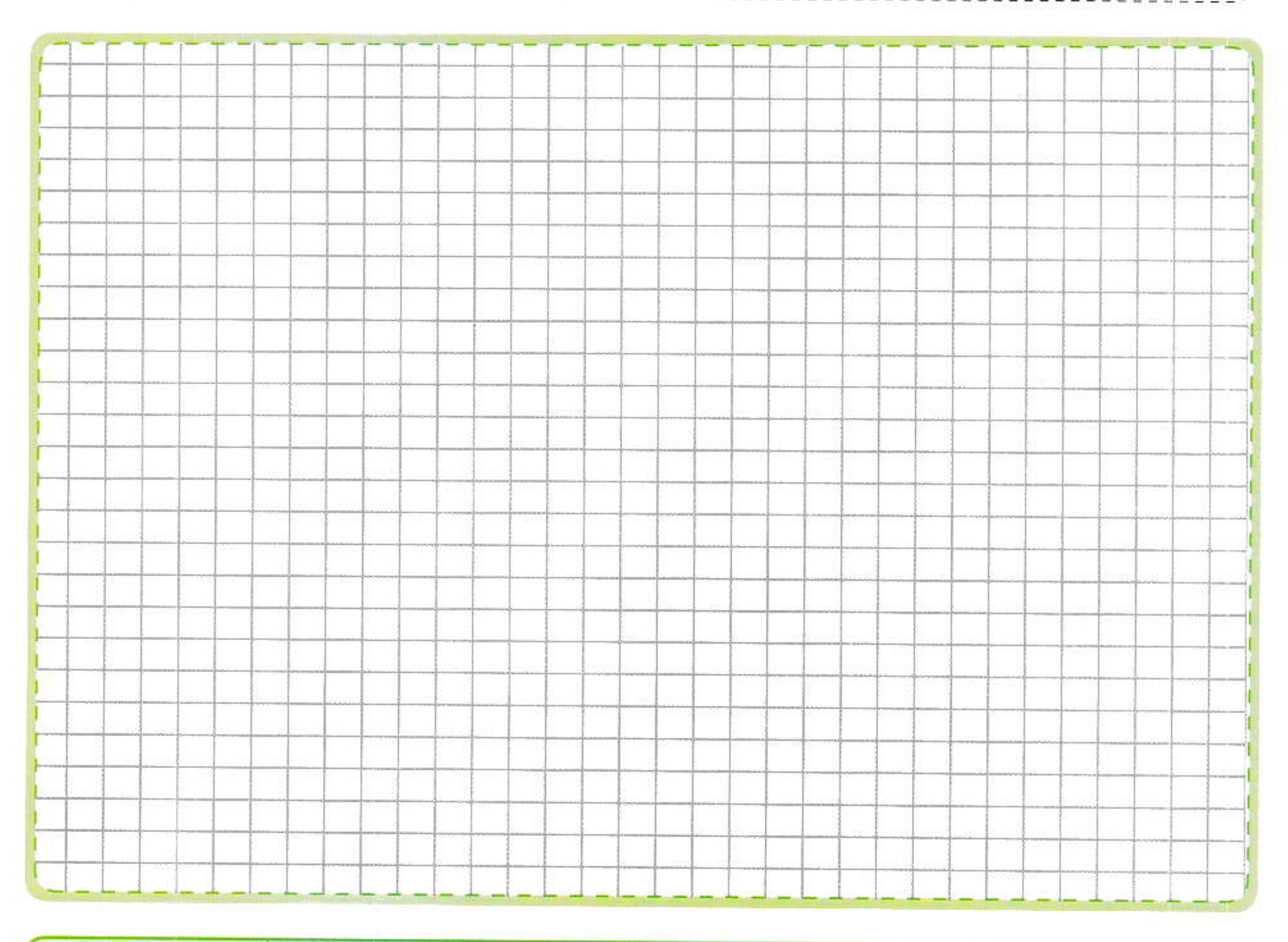


Shapes	Area (square unit)	Perimeter (unit)
Shape 1	7 square units	12 units
Shape 2		
Shape 3		
Shape 4		
Shape 5		
Shape 6		
Shape 7		
Shape 8		
Shape 9		
Shape 10		
Shape 11		

Parents' Tips:

- Encourage your child to calculate the total area of the shapes above.

Use the given grid to form your own 10 combined shapes, then record their area and perimeter in the table:



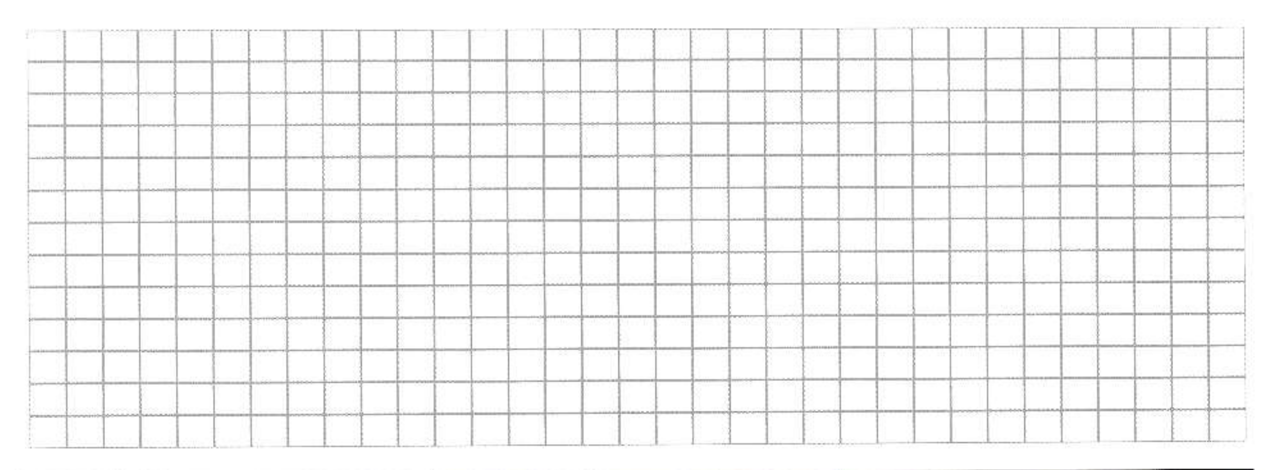
Shapes	Area (square unit)	Perimeter (unit)
Shape 1		
Shape 2		
Shape 3		
Shape 4		
Shape 5		
Shape 6		
Shape 7		
Shape 8		
Shape 9		
Shape 10		

Parents' Tips:

- Let your child draw his /her game board.

Use the given areas to form your own house, then calculate the perimeter of each room and find the total area of the home:

Kitchen = 20 square units
Living room = 36 square units
Dining room = 12 square units
bedroom = 45 square units
bathroom = 18 square units
balcony = 10 square units

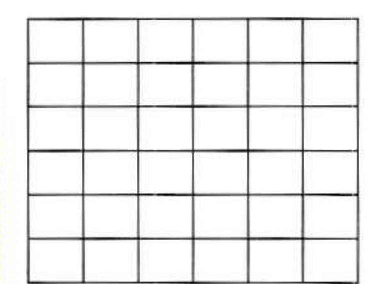


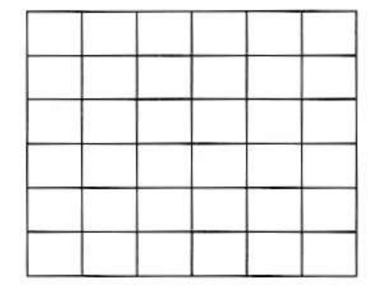
Name of the room	Perimeter (unit)	Area (square unit)
kitchen		
bedroom		
living room		
bathroom		
dining room		
balcony		
total area		

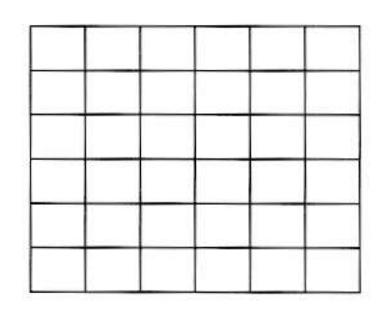
- Drawing regular and irregular shapes on grid paper.
- Finding the area and perimeter of shapes.

General activities on Chapter 6

1 **Use the following shape to shade exactly its half using 3 different ways:**







First way

Half = ...

Second way

Half = ...

Third way

Half = ...

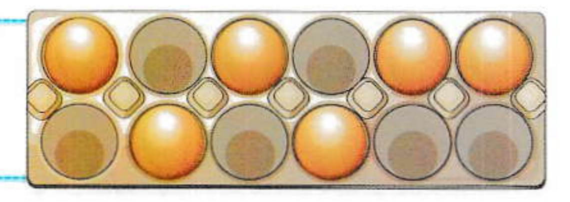
2 **Read, then solve:**

a) Sheren needs to paint a wall equally with two different colors. The wall is 12 meters by 8 meters. Find the area of one part of the painted wall to find the area of the wall she should paint with one color.

....

....

b) Soha was helping her mother in the kitchen, she was boiling some eggs, when she opened the box she told her mother that only half of the eggs were left, do you agree with her?



3 Order the following fractions using the number line:

a) $\frac{3}{6}$, $\frac{1}{4}$, $\frac{7}{8}$, $\frac{2}{8}$

0 ———————— 1

....

b) $\frac{1}{3}$, $\frac{2}{8}$, $\frac{6}{8}$, $\frac{12}{12}$

0 ———————— 1

....

c) $\frac{6}{12}$, $\frac{2}{8}$, $\frac{1}{4}$, $\frac{10}{12}$

0 ———————— 1

....

4 Use the number cards to answer the following questions:

8	0	3	0	1	9

1- What is the smallest six-digit number you can make?

....

2- What is the greatest six-digit number you can make?

....

5 Write the following in standard form:

82 thousands, 7 tens, 32 hundreds, 7 ones = ...

9 tens, 63 hundreds, 7 ones, 21 thousands = ...

67 hundreds, 14 tens, 29 ones = ...

3 tens, 5 thousands, 2 ones = ...

6 Match:

a)	eighty thousand	• 400 + 0 + 7
b)	900,024	• 80,000
c)	nine hundred fifty four thousand and two	• nine hundred thousand and twenty four
d)	four hundred and seven	• 954,002

7 Complete the table below:

Start time	End time	Elapsed time
....	6:15 p.m.	4 hours and 10 minutes
3:45 a.m.	....	3 hours and 5 minutes
2:10 p.m.	3:55 p.m.	....

8 Use the given measurements of the kitchen tools to form a line plot, then answer:

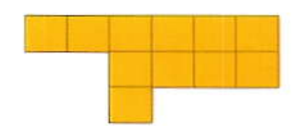
tools	blue	red	silver
spoon	6 and half cm	7 cm	4 and half cm
knife	4 and half cm	6 cm	7 cm
fork	7 and half cm	7 cm	6 and half cm

Title: ....

a) What is the most frequent measurement? ....

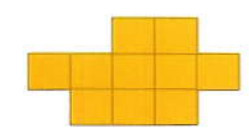
b) How many tools are at least 7 and half cm tall? ....

9 Find the perimeter and the area of the following shapes:



Area = ...

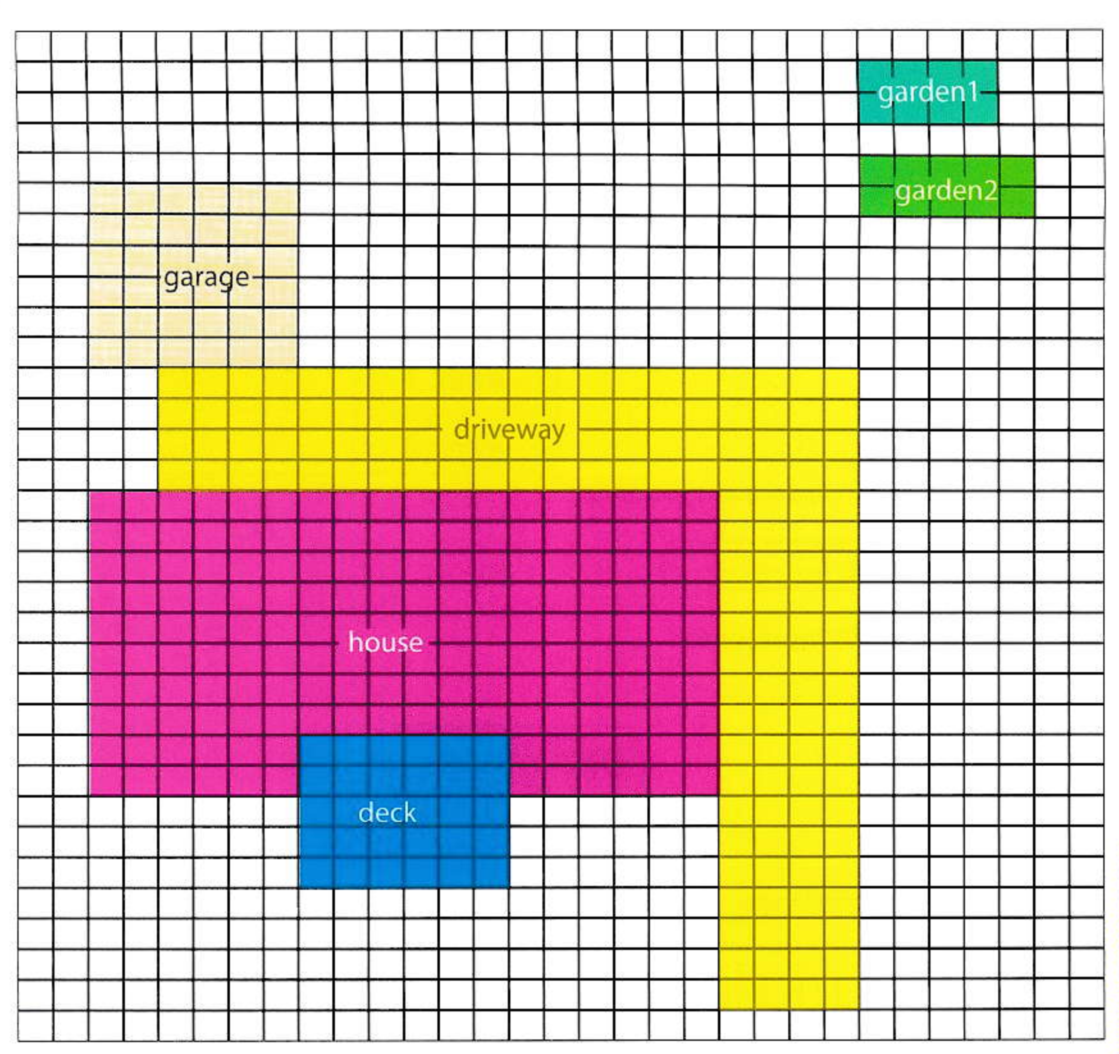
Perimeter = ...



Area = ...

Perimeter = ...

10 Observe the house, then answer the following questions:



1. What is the area of the house?

....

2. What is the area of the deck?

....

3. What is the total area of the gardens?

....

4. What is the area of the driveway?

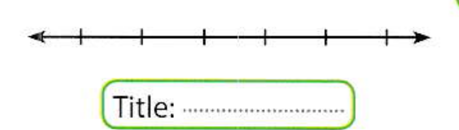
....

11 Form a line plot and bar graph to show the following data:

The following tally chart shows the number of bicycles in a bike shop sold during a period of 4 weeks.

Line plot

week 1	卌 卌 卌 /
week 2	卌 卌 卌
week 3	卌 卌 卌
week 4	卌 卌 卌 卌



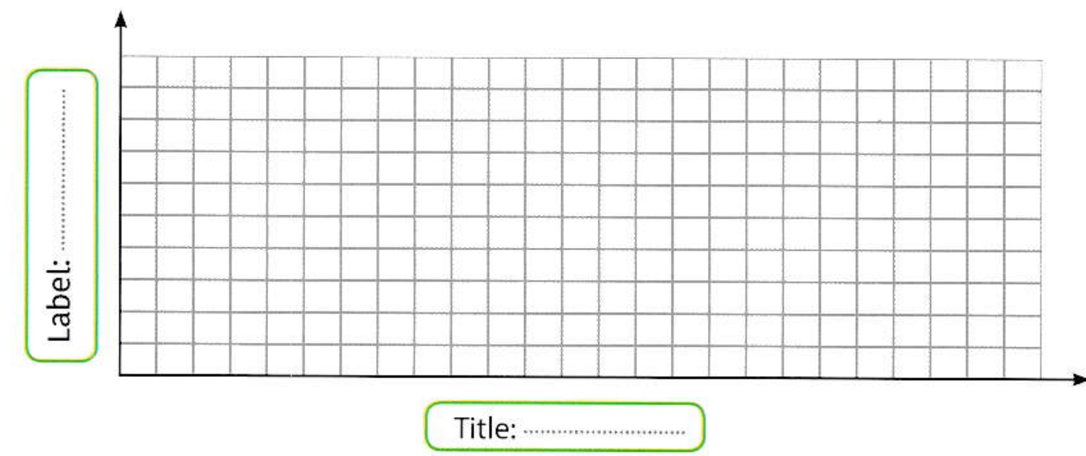
Title: ....

Key: each X's represents: ....

Bar gragh

Title: ....

Label: ....



Title: ....

a) How many bicycles were sold in the first and third week? ....

b) How many bicycles were sold in the four weeks together? ....

12 Write each of the following in word form:

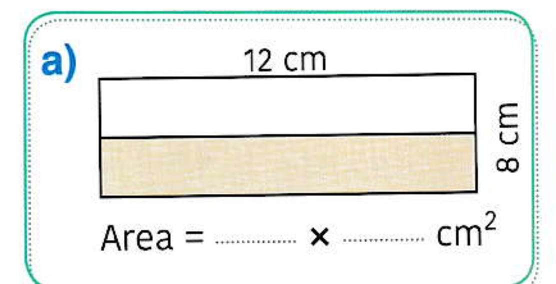
a) 562 thousands, 9 tens = ...

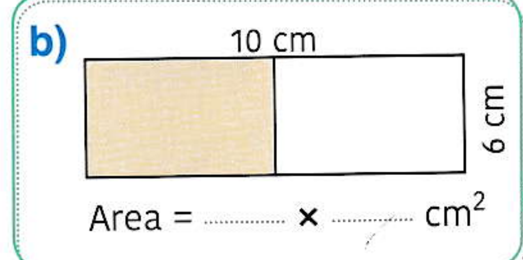
b) 700 301 = ...

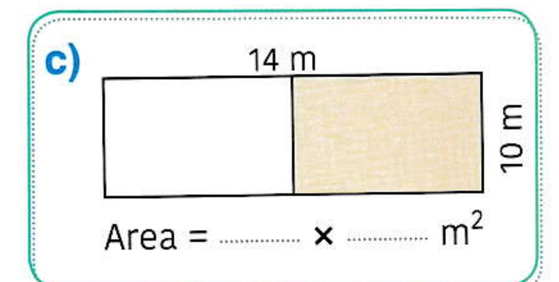
c) 50 hundreds, 6 ones = ...

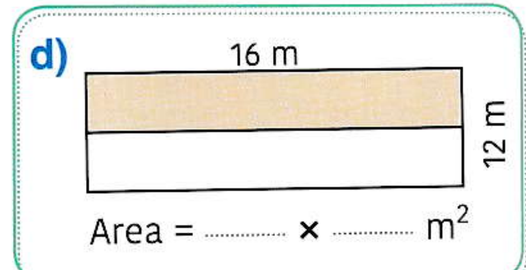
d) 302 500 = ...

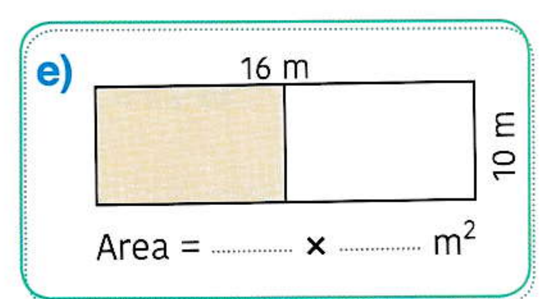
13 Calculate the area of the colored parts:

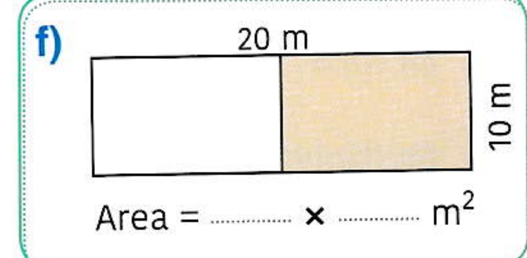












Connect on Chapter 6

1 Connect:

a) Complete the missing factors in the fact families below:

20 ÷ .... = 4	54 ÷ .... = 9	16 ÷ .... = 4
Therefore	Therefore	Therefore
4 × .... = 20	.... × 9 = 54	4 × .... = 16

2 Add:

$$\begin{array}{r} 378 \\ +\ 503 \\ \hline \end{array} \quad \begin{array}{r} 198 \\ +\ 45 \\ \hline \end{array} \quad \begin{array}{r} 488 \\ +\ 271 \\ \hline \end{array} \quad \begin{array}{r} 607 \\ +\ 38 \\ \hline \end{array}$$

....

3 Divide:

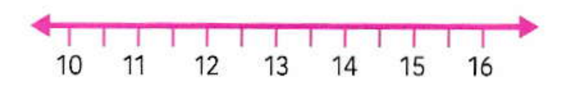
18 ÷ 3 = ...	24 ÷ 6 = ...	80 ÷ 10 = ...
36 ÷ 4 = ...	30 ÷ 3 = ...	54 ÷ 9 = ...
48 ÷ 4 = ...	4 ÷ 4 = ...	49 ÷ 7 = ...

4 Multiply:

3 × 9 = ...	5 × 12 = ...	8 × 1 = ...
5 × 8 = ...	4 × 6 = ...	6 × 9 = ...
4 × 11 = ...	7 × 7 = ...	2 × 7 = ...

1 **Use the given measurements to form a line plot:**

Types	Measurements		
red pen	10 cm	$11\frac{1}{2}$ cm	13 cm
blue pen	$10\frac{1}{2}$ cm	12 cm	13 cm
green pen	12 cm	$14\frac{1}{2}$ cm	13 cm



Title: ....

Key: Each x's represents: ....

2 **The area of a rectangular shape garden is 36 square meters. Find the area of half of the garden.**

....

....

3 **Rasha started her homework at 4:00 p.m. It took her 30 minutes to do math homework, 15 minutes to do Arabic homework and 40 minutes to finish science homework.**

Find the time needed to finish her homework and the elapsed time she took.

....

....

Follow the directions below to gather data and create a line plot to display your data:

1- Use tally marks to record your rolls and your friend's rolls using die in the table below.

2- Work with your friend to roll the die more times. Use tally marks to record each roll in the table below. Be careful to keep track of your number of rolls so you and your friend roll exactly 10 times.

My rolls

Number	Tallies

My friend's rolls

Number	Tallies

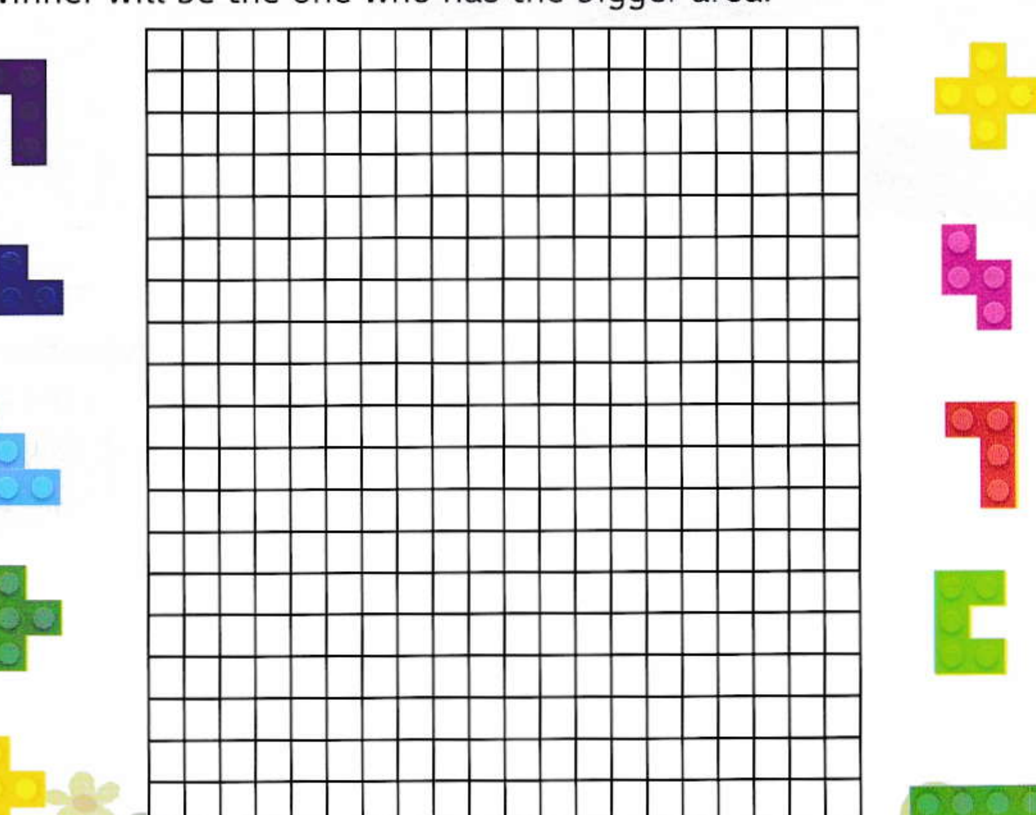
3- Use the data in your table to make a line plot.
Be sure to add a title and a key.

Title: ....

Key: each X's represents ....

Play a Tetris game with and your friend and follow the rules:

1. Use the irregular shapes that are given to draw to form your own combined shapes starting from the bottom of the grid till you reach the top.
2. Each shape is used only one time in each path.
3. The faster you finish and reach the top, the closer you will be to win.
4. Finally calculate the total area of your own path then compare it with your friend's path.
5. The winner will be the one who has the bigger area.



My total area = ... square units

My friend's total area = ... square units

.... area > .... area

.... is the winner.

9- Add and subtract fractions with common denominator.
8 - Write one whole as a fraction.
7- Identify unit and proper fractions of a set.
6- Compare between fractions.
5- Solve and write fraction story problems using different models.
MAP
4- Create picture models, bar models and number lines to represent fractions.
3- Solve 2-step story problems involving addition, subtraction multiplication and division.
2- Apply different strategies to estimate products.
1- Apply associative and distributive properties of multiplication.
START

10- Use drawing, number lines and bar models to find equivalent fractions.
11- Write multiplication and division equations to represent fact families.
12- Identify strategies to remember multiplication facts.
13- Determine the area and perimeter of complex shapes.
14- Solve story problems involving time.
15-Order fractions on a number line.
16- Solve place value problems.
17- Solve elapsed time problems.
18- Measure objects to the nearest half centimeter.
20- Use data to form a bar graph.
19- Use data to form a line plot.

Chapter 1

Sheet 1

Activity 1 Find the product using associative property:

a) $3 \times (2 \times 5) =$

_____ x _____ = _____

b) $(10 \times 4) \times$ _____ =

_____ x _____ = 120

c) $(3 \times 10) \times$ _____ =

_____ x _____ = 60

d) $9 \times (5 \times 2) =$

_____ x _____ = _____

e) $7 \times (2 \times$ _____ $) =$

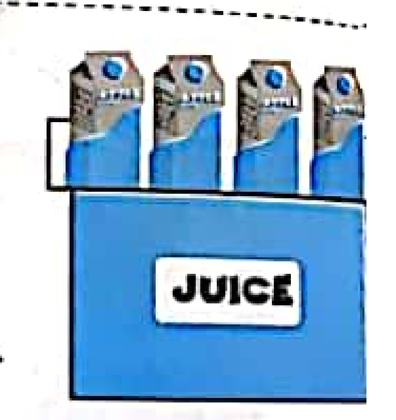
_____ x _____ = 70

f) (_____ x 10) x 8 =

_____ x _____ = 800

Activity 2 Read, then solve:

a) Noha went shopping. She bought three boxes of juice. Each box had 4 rows of juice, each row had 3 juice cartons. How many juice cans did she buy?



The number of juice cartons = _____ x _____ x _____ = _____

b) There is a new roller coaster at the park. It has six car attached to each other. Each car has 5 rows with 4 seats. How many passengers can ride on the roller coaster?

The number of passengers = _____ x _____ x _____ = _____

Activity 3 Draw a bar model to solve the problems using distributive property:

a) $2 \times 13 =$ ____ $\times$ (____ + ____)

= ____

b) $5 \times 9 =$ ____ $\times$ (____ + ____)

= ____

c) $11 \times 8 =$ ____ $\times$ (____ + ____)

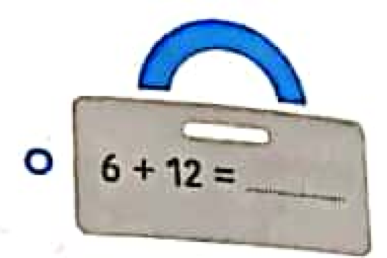
= ____

d) $20 \times 4 =$ ____ $\times$ (____ + ____)

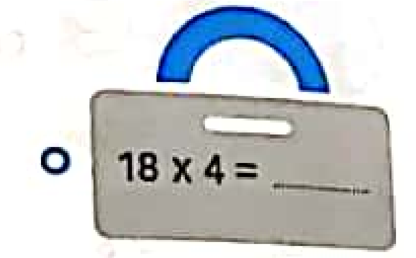
= ____

Activity 4 Match the equal results:

a) $(6 \times 3) \times 4$ = ____



b) $2 \times 5 \times 10$ = ____



c) $3 \times (2 + 4)$ = ____

$18 + 8 =$ ____

d) $2 \times (9 + 4)$ = ____

Activity 3 Complete:

a) Find the fraction of the set of fruits in the jar:

Strawberry = $\frac{\dots}{\dots}$

Lemon = $\frac{\dots}{\dots}$

Apple = $\frac{\dots}{\dots}$

b) Find the fraction of the set of toys in the box:

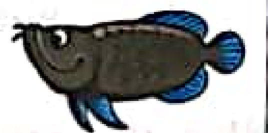
- The big cars = $\frac{\dots}{\dots}$
- The big dolls = $\frac{\dots}{\dots}$
- The small cars = $\frac{\dots}{\dots}$

Activity 4 Read, then answer:

a) Which half is larger?

Half of .... is larger.

b) Which half is longer?



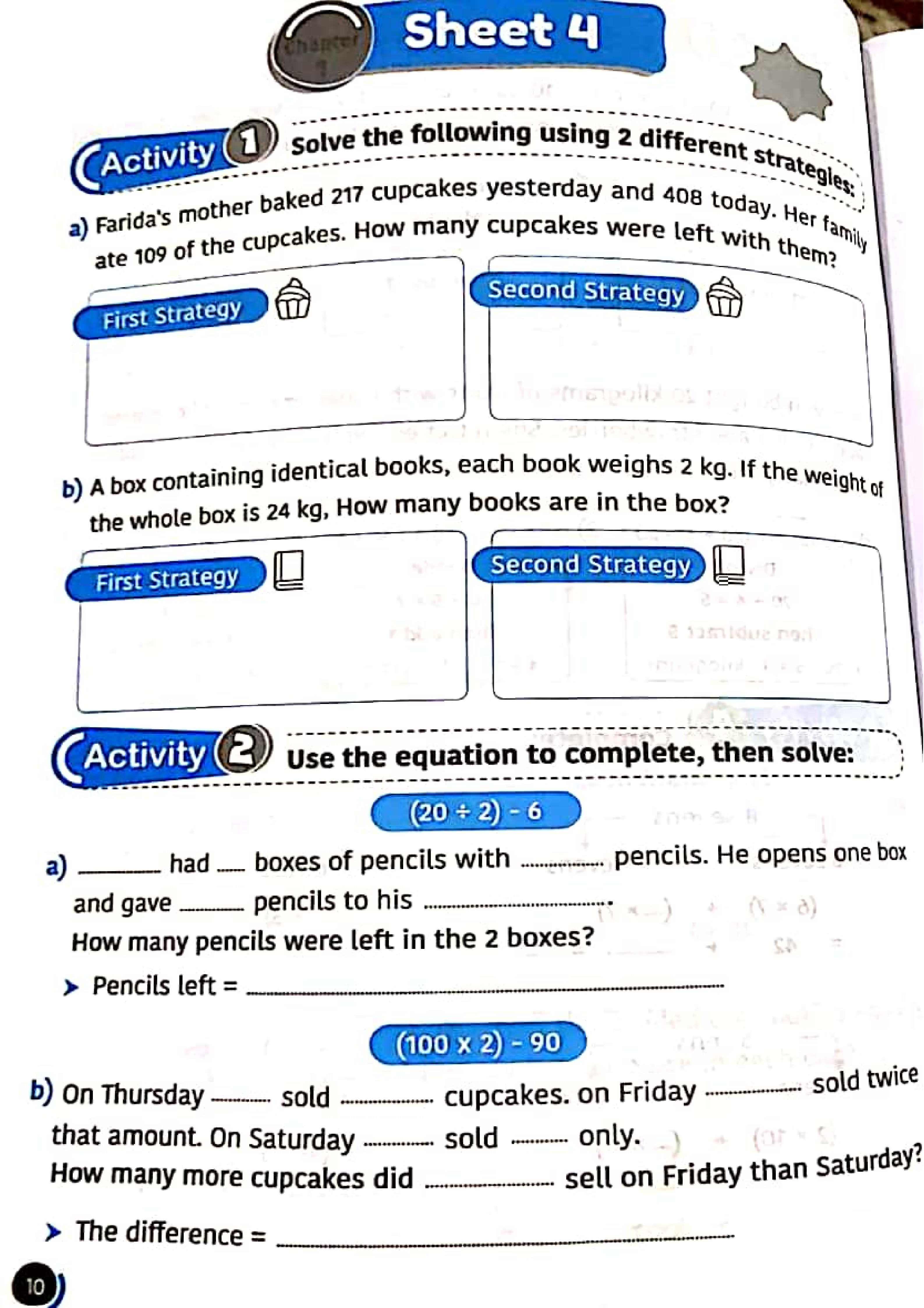
Half of .... is longer.

c) Which half is bigger?

Half of .... is bigger.

d) Which half holds more?

Half of .... has more.



Sheet 4

Activity 1 Solve the following using 2 different strategies:

a) Farida's mother baked 217 cupcakes yesterday and 408 today. Her family ate 109 of the cupcakes. How many cupcakes were left with them?

First Strategy

Second Strategy

b) A box containing identical books, each book weighs 2 kg. If the weight of the whole box is 24 kg, How many books are in the box?

First Strategy

Second Strategy

Activity 2 Use the equation to complete, then solve:

$(20 \div 2) - 6$

a) .... had ...... boxes of pencils with .... pencils. He opens one box and gave .... pencils to his ....

How many pencils were left in the 2 boxes?

- Pencils left = ...

$(100 \times 2) - 90$

b) On Thursday .... sold .... cupcakes. on Friday .... sold twice that amount. On Saturday .... sold .... only.

How many more cupcakes did .... sell on Friday than Saturday?

- The difference = ...

Activity 3 Form two-step story problems using the given equations:

$(18 \div 3) - 4$

a)

$(3 \times 7) + 10$

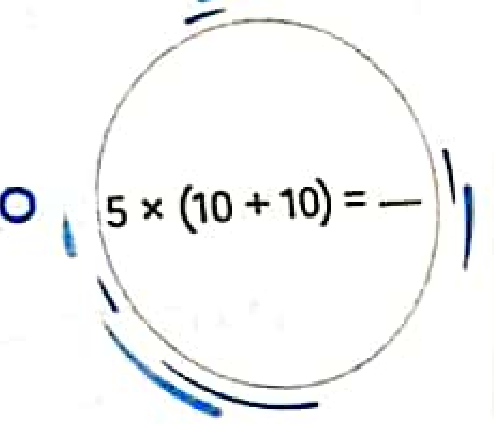
b)

Match:

a) There are 20 trees. Each tree has 5 apples.
How many apples are there?

$20 \div 5 =$ ____

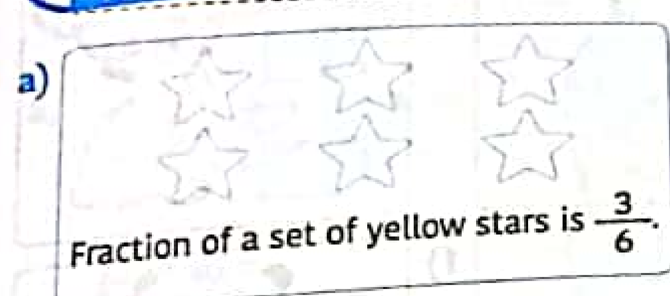
b) There are 20 apples if each tree has 5 apples.
How many trees are there?



Sheet 3

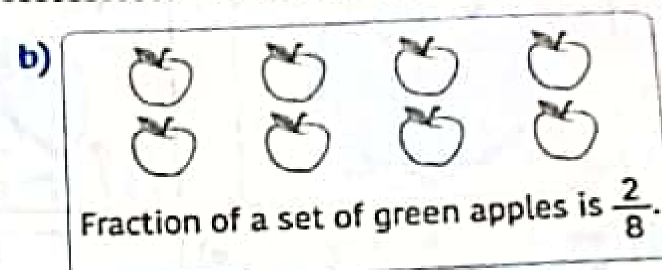
Activity 1 Color to represent each fraction of the following:

a)



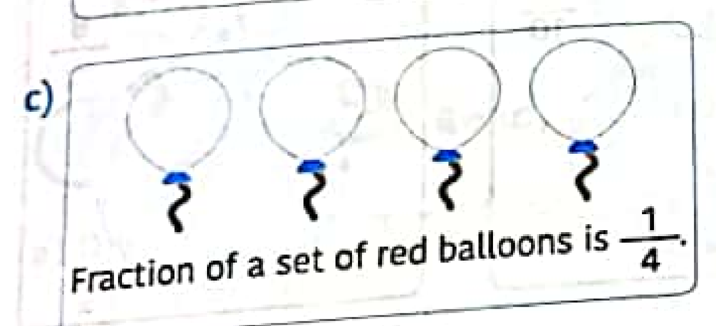
Fraction of a set of yellow stars is $\frac{3}{6}$.

b)



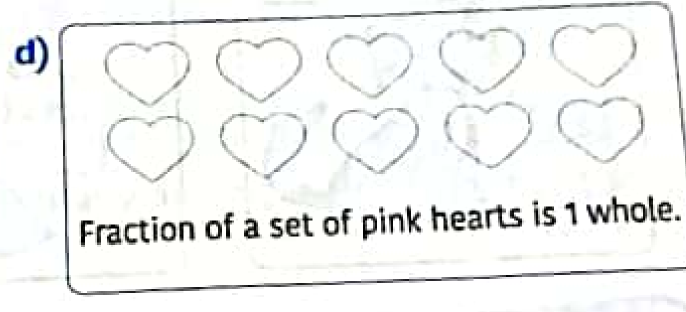
Fraction of a set of green apples is $\frac{2}{8}$.

c)



Fraction of a set of red balloons is $\frac{1}{4}$.

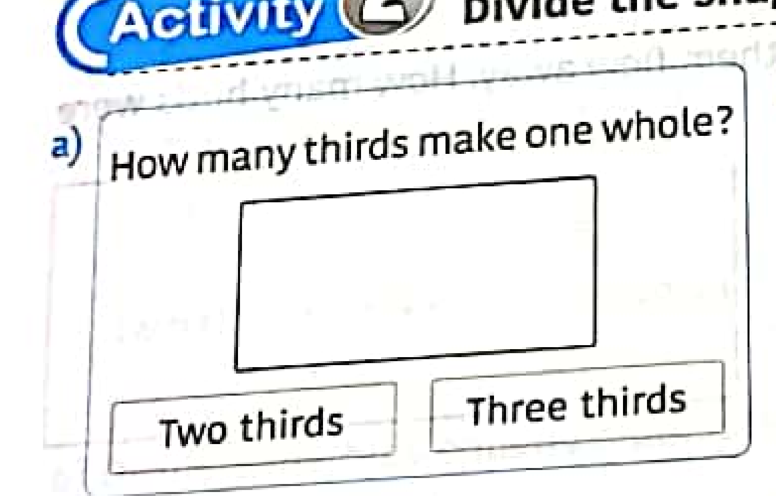
d)



Fraction of a set of pink hearts is 1 whole.

Activity 2 Divide the shapes, then choose:

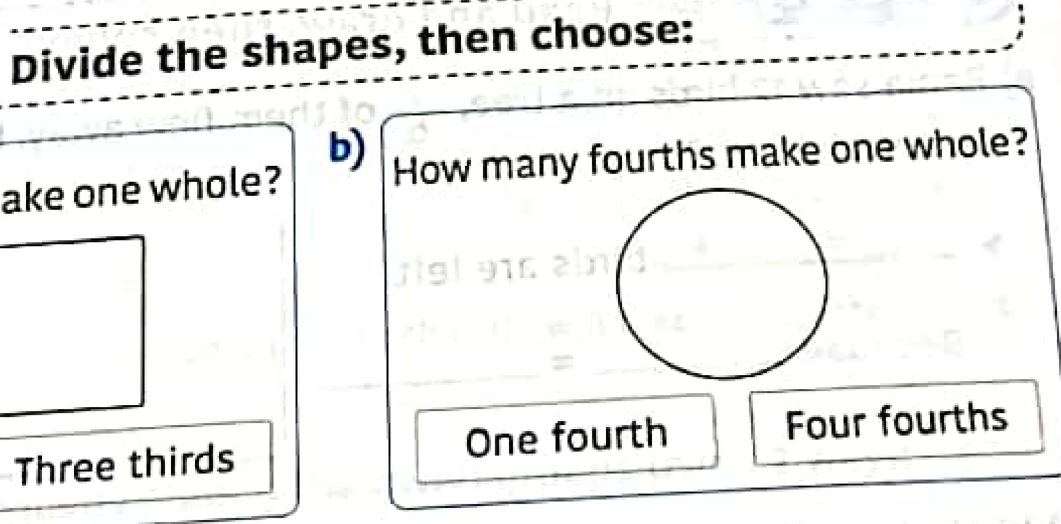
a)



How many thirds make one whole?

Two thirds | Three thirds

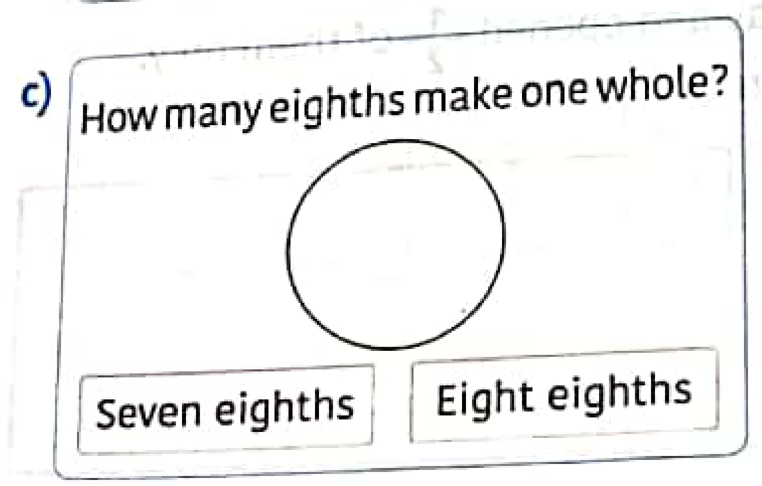
b)



How many fourths make one whole?

One fourth | Four fourths

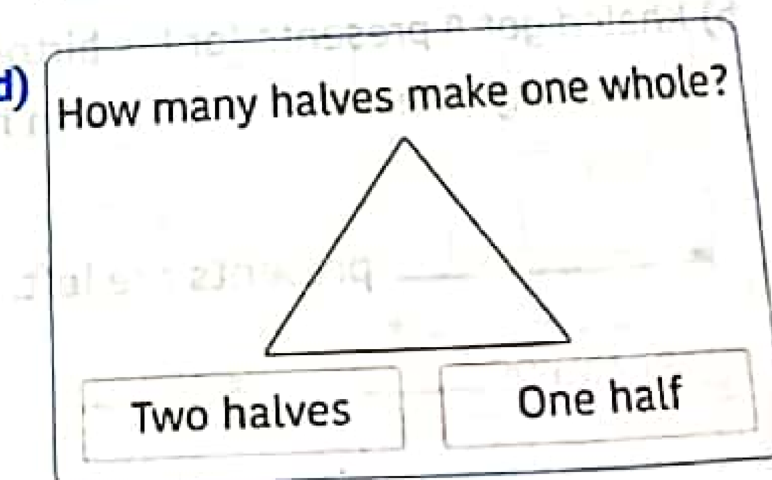
c)



How many eighths make one whole?

Seven eighths | Eight eighths

d)



How many halves make one whole?

Two halves | One half

Activity 1 Draw to divide each shape equally, then read the fraction:

a) 6 equal parts

Name: ....

b) 2 equal parts

Name: ....

c) 7 equal parts

Name: ....

d) 8 equal parts

Name: ....

e) 3 equal parts

Name: ....

f) 4 equal parts

Name: ....

Activity 2 Draw and divide fraction strips to represent the given fractions:

a) Fifths

1 whole

...... equal parts to represent fifths

b) Thirds

1 whole

...... equal parts to represent thirds

c) Halves

1 whole

...... equal parts to represent halves

d) Sixths

1 whole

...... equal parts to represent sixths

e) Eighths

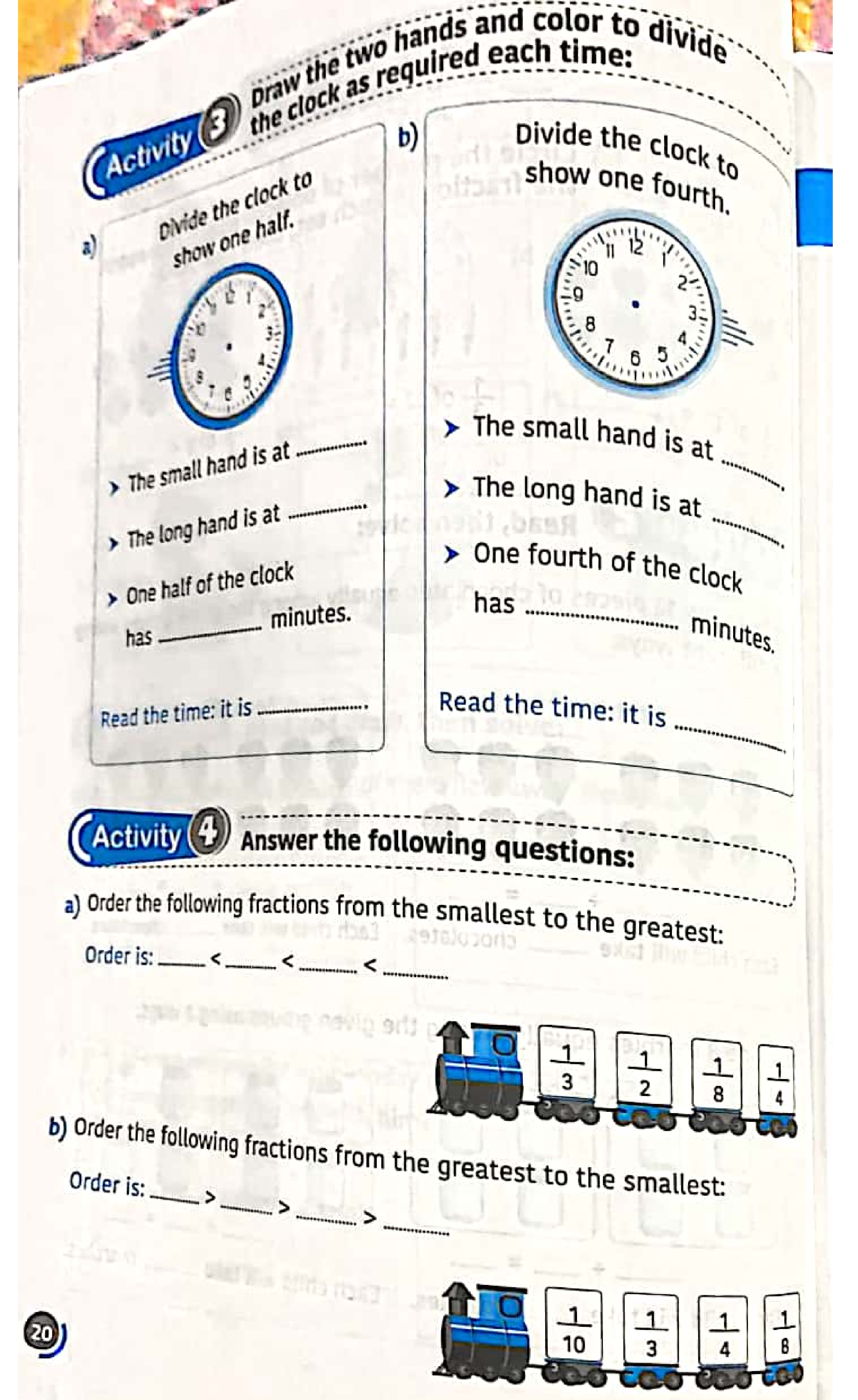
1 whole

...... equal parts to represent eighths

f) Fourths

1 whole

...... equal parts to represent fourt



Activity 3 Draw the two hands and color to divide the clock as required each time:

a) Divide the clock to show one half.

- The small hand is at ....
- The long hand is at ....
- One half of the clock has .... minutes.

Read the time: it is ....

b) Divide the clock to show one fourth.

- The small hand is at ....
- The long hand is at ....
- One fourth of the clock has .... minutes.

Read the time: it is ....

Activity 4 Answer the following questions:

a) Order the following fractions from the smallest to the greatest:

Order is: ...... < ...... < ...... < ......

$\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{8}$ $\frac{1}{4}$

b) Order the following fractions from the greatest to the smallest:

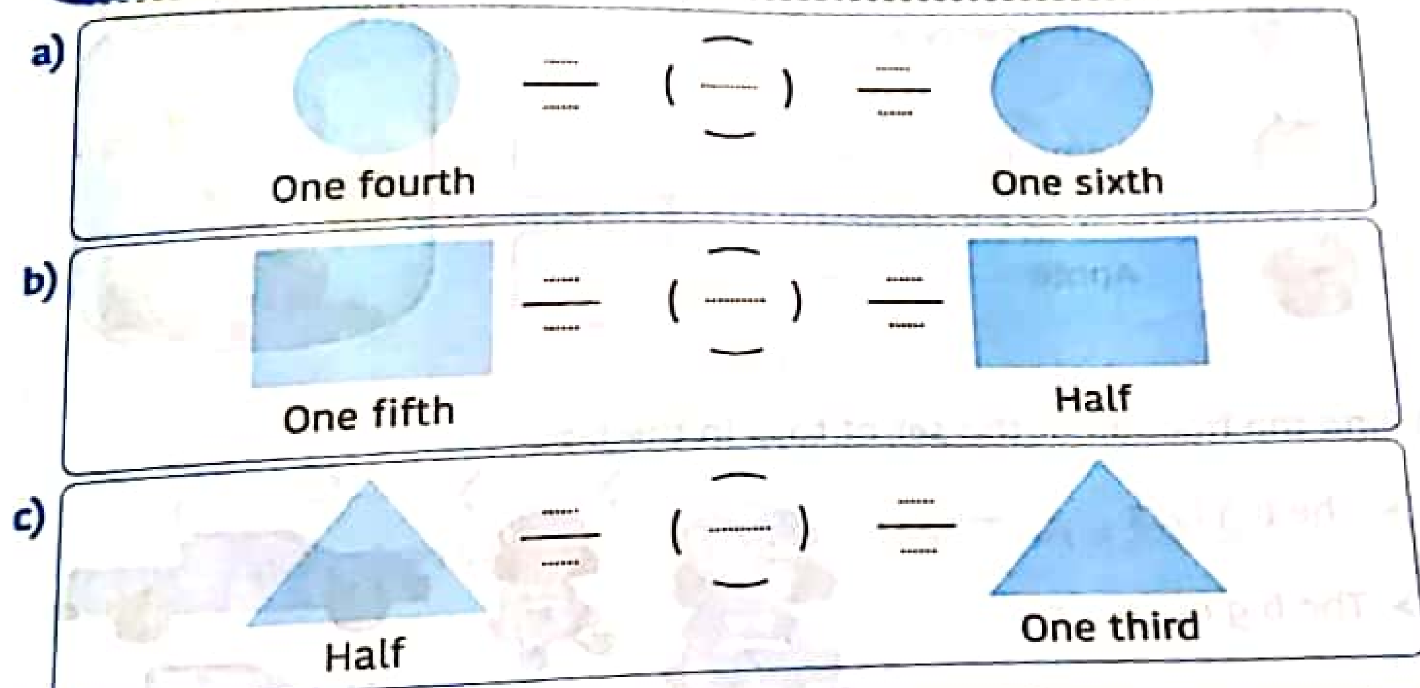
Order is: ...... > ...... > ...... > ......

$\frac{1}{10}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{8}$

Chapter 2

Sheet 2

Activity 1 Divide to represent the following fractions, then compare using (> , < , =):



a) One fourth $\frac{\dots}{\dots}$ (......) $\frac{\dots}{\dots}$ One sixth

b) One fifth $\frac{\dots}{\dots}$ (......) $\frac{\dots}{\dots}$ Half

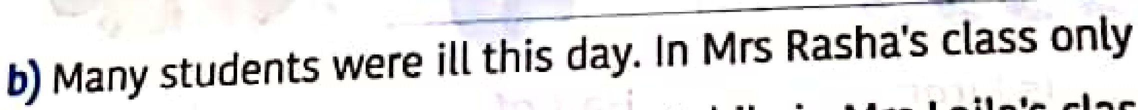
c) Half $\frac{\dots}{\dots}$ (......) $\frac{\dots}{\dots}$ One third

Activity 2 Read, then solve:

a) A group of boys made a pile of snowballs. Ahmed made $\frac{1}{3}$ of the snowballs and Rahim made $\frac{1}{5}$ of the snowballs.

> .... made more snowballs than ....

Because $\frac{\dots}{\dots} > \frac{\dots}{\dots}$

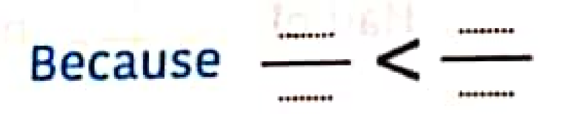


b) Many students were ill this day. In Mrs Rasha's class only $\frac{1}{2}$ of the students were present while in Mrs Laila's class only $\frac{1}{4}$ of students were present. Which class has the most students absent?

(Note: The 2 classes have the same number of students)

> Mrs .... class has more absent students than Mrs ....

Because $\frac{\dots}{\dots} < \frac{\dots}{\dots}$



Activity 3 Choose the right answer:

a) In one week Laila saved L.E. 10 daily. On Sunday she spent her L.E. 10. Find the total amount of money she saved during that week.

1) Equation: $(10 \times 7) - 7$
Multiply
$10 \times 7 = 70$
Then subtract 7
$70 - 7 =$ L.E. 63

2) Equation: $(10 \times 6) + 7$
Multiply
$10 \times 6 = 60$
Then Add 7
$60 + 7 =$ L.E. 67

3) Equation: $(7 \times 10) - 10$
Multiply
$7 \times 10 = 70$
Then subtract 10
$70 - 10 =$ L.E. 60

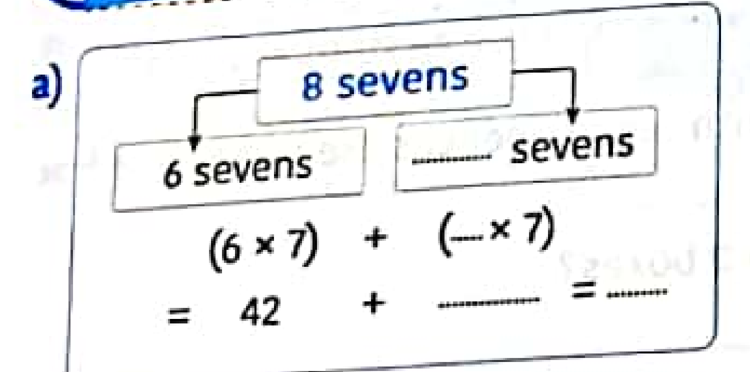
b) Nesreen bought 20 kilograms of fruits with equal amounts of bananas, apples, figs and strawberries. She returned the figs as they were bad. How many kilograms of fruits were left with her?

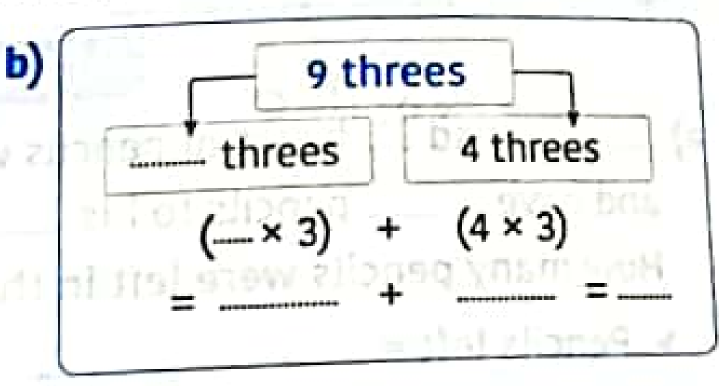
1) Equation: $(20 \div 4) - 20$
Divide
$20 \div 4 = 5$
Then subtract 5
$20 - 5 = 15$ kilograms

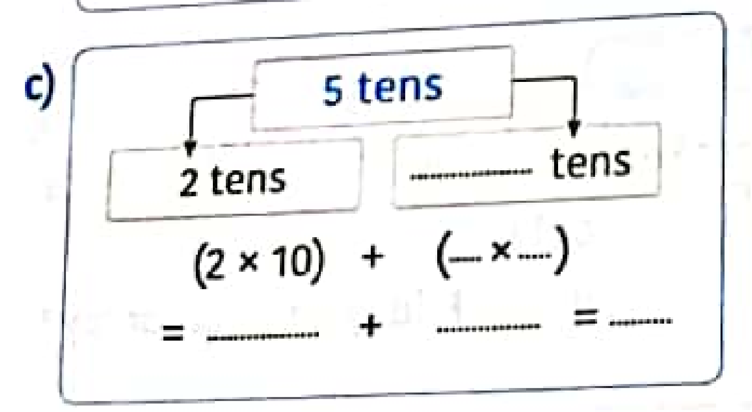
2) Equation: $(20 \div 5) + 1$
Divide
$20 \div 5 = 4$
Then add 1
$4 + 1 = 5$ kilograms

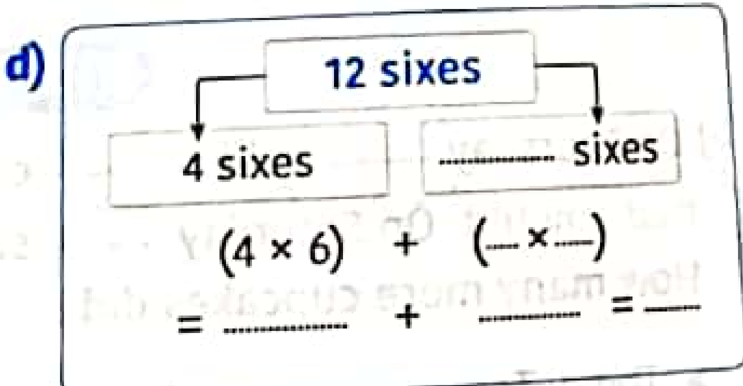
3) Equation: $(20 \times 4) - 5$
Multiply
$20 \times 4 = 80$
Then subtract 5
$80 - 5 = 75$ kilograms

Activity 4 Complete:

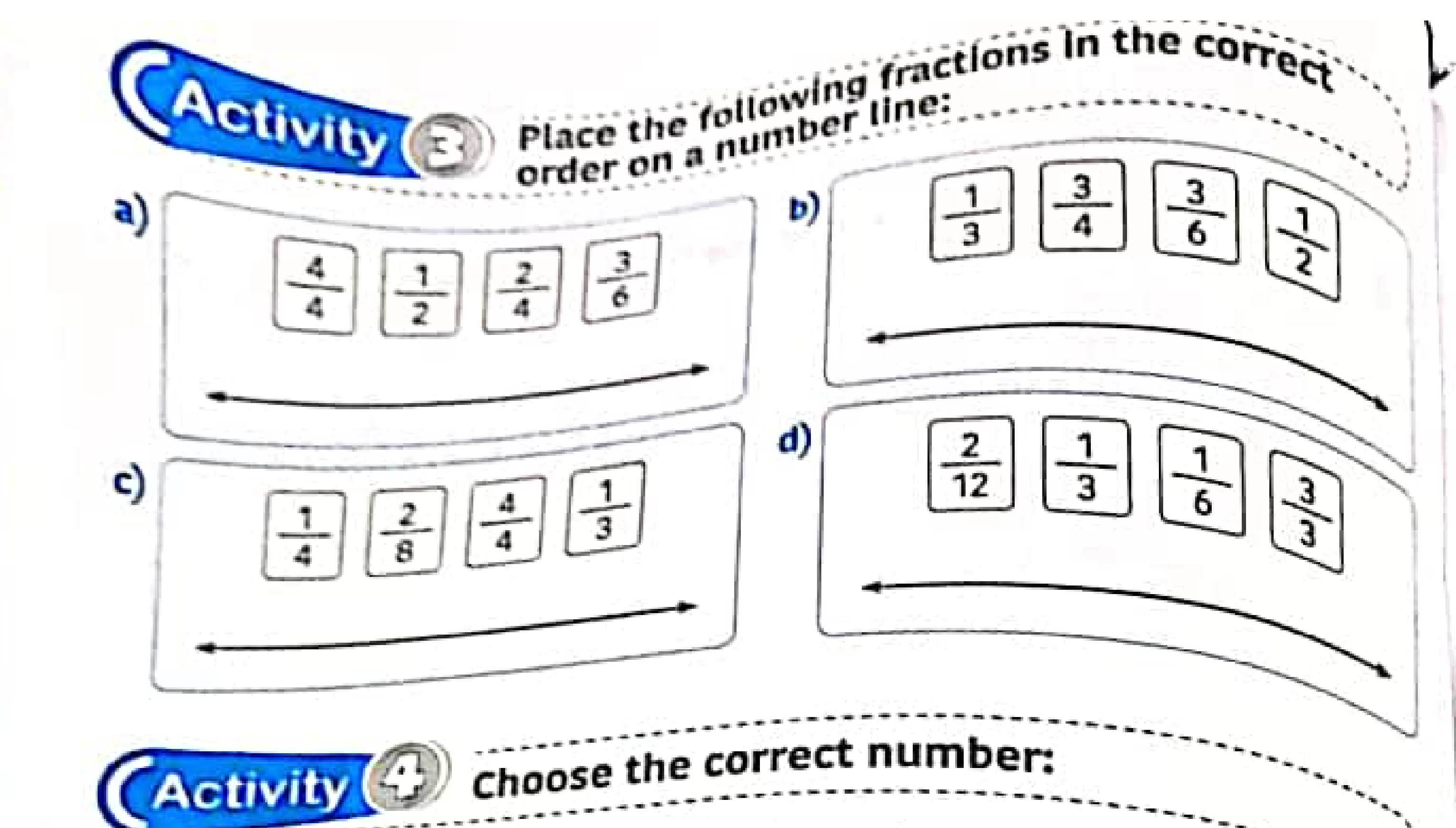
a)


b)


c)


d)


Activity 3 Place the following fractions in the correct order on a number line:



Activity 4 Choose the correct number:

a) *I have 2 in my hundred thousands place, 6 in my ten thousands place, 4 in my hundreds place, 3 in my tens place and 0 in my ones place.*

- 266403
- 26430
- 266430
- 20643

b) *I have the double of 2 in my thousands place, my hundreds place is bigger than 7 and less than 9, I have 3 in my tens place and ones place.*

- 4803
- 4833
- 22304
- 2283

c) *I have the double of 3 in my ten thousands place, zero in my thousands and ones place, 5 in my hundreds and tens place.*

- 90550
- 9055
- 9559
- 9005

Activity 3 Use the following measurements to form a line plot:

➤ The following table represents the measurements of some colored ties:

Ties	Measurements		
Red tie	50 cm	51 and half cm	52 cm
Blue tie	51 cm	52 cm	53 half cm
Black tie	52 cm	53 and half cm	55 cm
Green tie	52 half cm	51 cm	53 and half cm

Title: ....

Key: each X'S represents ....

a) What is the most frequent measurement on the line plot?

....

b) How many ties are less than 53 and half cm?

....

Activity 4 Use your ruler to draw a line to represent the following measurements:

a) blue line with 6 and half cm

b) red line with 4 cm

c) black line with 8 and half cm

d) green line with 3 and half cm

e) pink line with 5 and half cm

f) red line with 7 cm

Activity 1

Find the missing numbers:

a) $\frac{1}{4} = \frac{......}{8}$

b) $\frac{1}{2} = \frac{5}{......}$

c) $\frac{2}{3} = \frac{......}{27}$

d) $\frac{4}{6} = \frac{8}{......}$

e) $\frac{1}{2} = \frac{......}{8}$

f) $\frac{2}{5} = \frac{12}{......}$

g) $\frac{3}{6} = \frac{6}{......}$

h) $\frac{1}{3} = \frac{......}{21}$

i) $\frac{3}{4} = \frac{......}{16}$

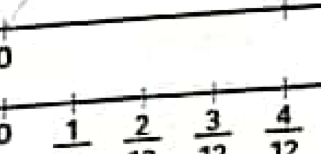
j) $\frac{5}{6} = \frac{20}{......}$

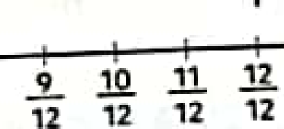
Activity 2

Find the equivalent fractions using the number line:

a) $\frac{2}{3} = \frac{......}{......}$

$\frac{1}{3} = \frac{......}{......}$





Number line: 0, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$ (1)

Number line: 0, $\frac{1}{12}$, $\frac{2}{12}$, $\frac{3}{12}$, $\frac{4}{12}$, $\frac{5}{12}$, $\frac{6}{12}$, $\frac{7}{12}$, $\frac{8}{12}$, $\frac{9}{12}$, $\frac{10}{12}$, $\frac{11}{12}$, $\frac{12}{12}$

b) $\frac{2}{4} = \frac{......}{......}$

$\frac{3}{4} = \frac{......}{......}$

Number line: 0, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$ (1)

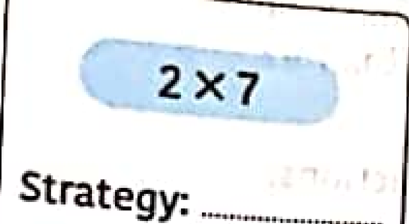
Number line: 0, $\frac{1}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, $\frac{7}{8}$, $\frac{8}{8}$

c) $\frac{4}{6} = \frac{......}{......}$

$\frac{6}{6} = \frac{......}{......}$

Number line: 0, $\frac{1}{6}$, $\frac{2}{6}$, $\frac{3}{6}$, $\frac{4}{6}$, $\frac{5}{6}$, $\frac{6}{6}$ (1)

Number line: 0, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$



Find the product, then record the multiplication facts you have used:

a) 2×7

Strategy: ....

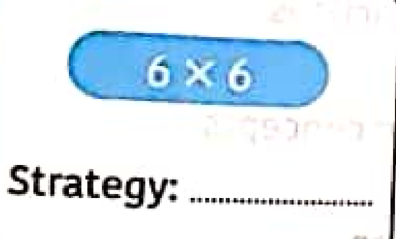
b) 10×5

Strategy: ....

c) 9×4

Strategy: ....

d)

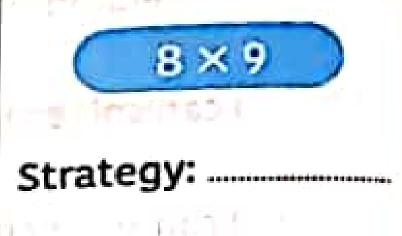


Strategy: ....

e) 7×3

Strategy: ....

f)

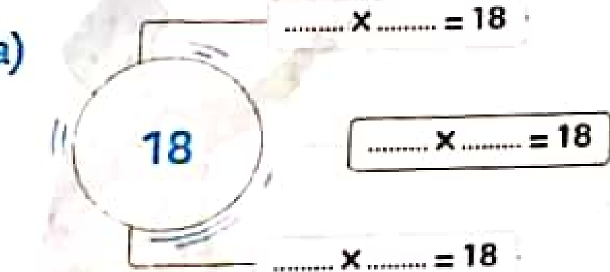


Strategy: ....

Activity 2

Find the factors of the given numbers:

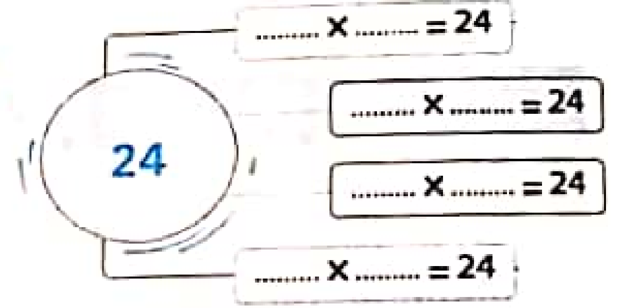
a)



Factors of the number 18 are:

.........., ..., ..., ..., ..., ...

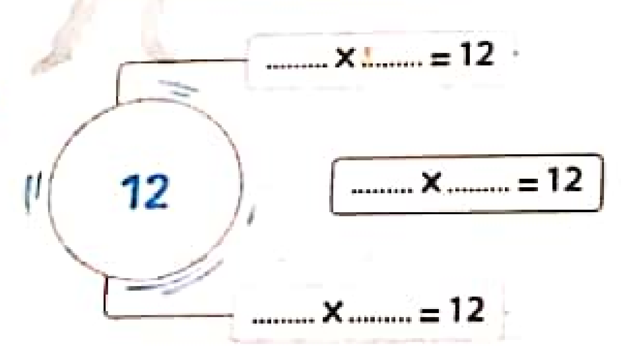
b)



Factors of the number 24 are:

.........., ..., ..., ..., ..., ..., ..., ...

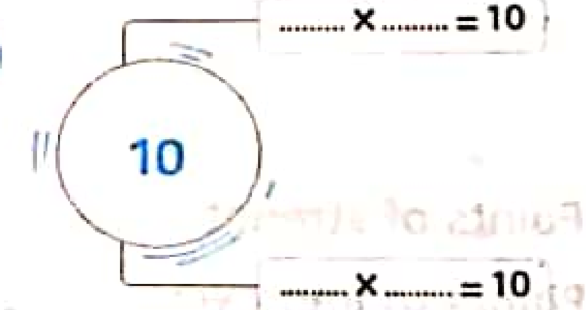
c)



Factors of the number 12 are:

.........., ..., ..., ..., ..., ...

d)

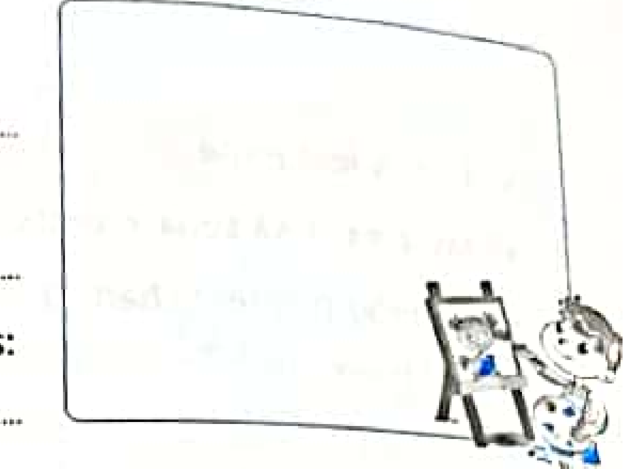


Factors of the number 10 are:

.........., ..., ..., ...

Activity 3 Read, then draw to find:

Adam drew four identical squares, if the area of one of the squares is 25 cm^2 and the length of one side is 5 cm, find:



- The perimeter of one of the squares:

....

- The total area of the four squares:

....

- The total perimeter of the four squares:

....

Activity 4 Read and draw, then find:

a) 6 cm

Area = 30 cm^2

.... cm

Width = ... cm

Perimeter = ... cm

b) .... cm

Area = 16 cm^2

Side length = ... cm

Perimeter = ... cm

c) .... cm

Area = 25 cm^2

Side length = ... cm

Perimeter = ... cm

d) .... cm

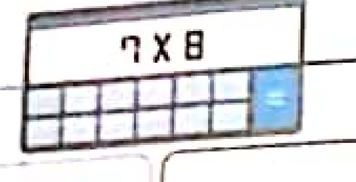
Area = 27 cm^2

3 cm

Length = ... cm

Perimeter = ... cm

Estimate the product, then find the actual result:



Estimated product will be ______

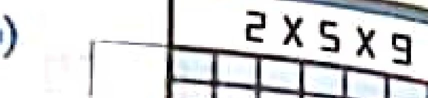
Because:

____ x ____ = ____

Actual result:

7 x 8 = ______

b)



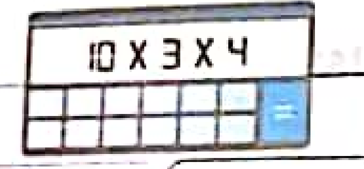
Estimated product will be ______

Because:

____ x ____ = ____

Actual result:

2 x 5 x 9 = ______



Estimated product will be ______

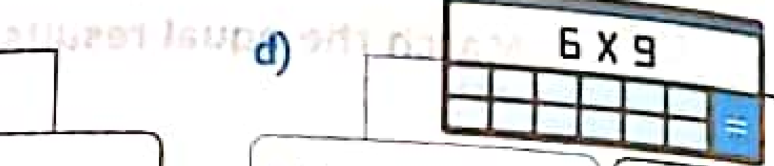
Because:

____ x ____ = ____

Actual result:

10 x 3 x 4 = ______

d)



Estimated product will be ______

Because:

____ x ____ = ____

Actual result:

6 x 9 = ______

Activity 2 **Complete the following:**

a)

36 ÷ ______ = 6

______ strategy

______

b)

______ x 7 = 63

______ strategy

______

c)

5 x ______ = 50

______ strategy

______

d)

______ ÷ 3 = 9

______ strategy

______

e)

6 x ______ = 42

______ strategy

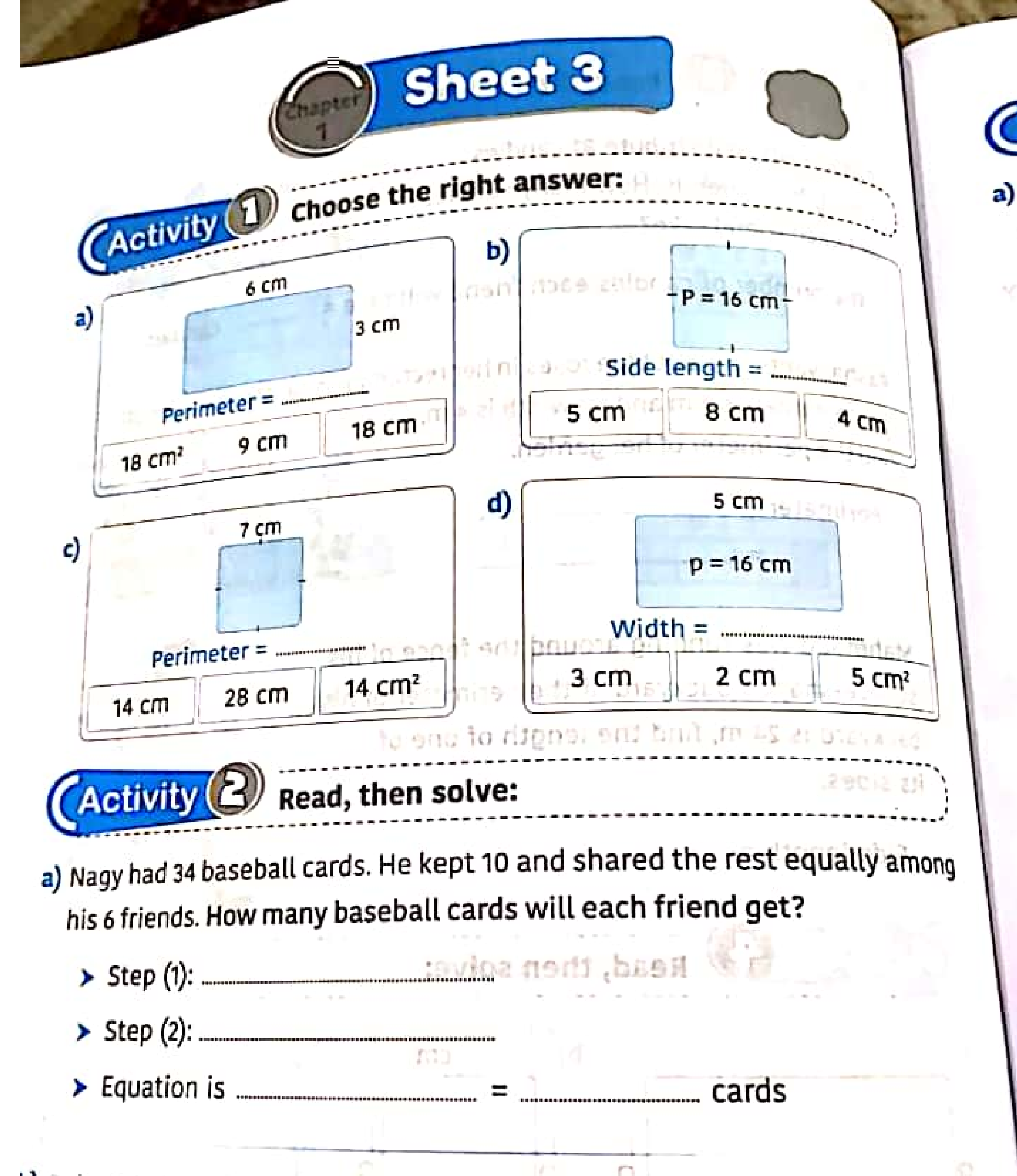
______

f)

49 ÷ ______ = 7

______ strategy

______



Chapter 1

Sheet 3

Activity 1 Choose the right answer:

a) 6 cm, 3 cm

Perimeter = ...

18 cm²	9 cm	18 cm

b) P = 16 cm

Side length = ...

5 cm	8 cm	4 cm

c) 7 cm

Perimeter = ...

14 cm	28 cm	14 cm²

d) 5 cm, p = 16 cm

Width = ...

3 cm	2 cm	5 cm²

Activity 2 Read, then solve:

a) Nagy had 34 baseball cards. He kept 10 and shared the rest equally among his 6 friends. How many baseball cards will each friend get?

- Step (1): ....
- Step (2): ....
- Equation is .... = ... cards

b) Rahma baked 3 trays of 10 cookies, then she divided the cookies equally among 6 bags. How many cookies did Rahma place in each bag?

- Step (1): ....
- Step (2): ....
- Equation is .... = ... cookies

Activity 5 Read, then solve:

a) Dalida had a big bar of chocolate. If she cut the chocolate into 4 equal parts, then she cut each fourth into 2 halves to share them equally among her friends, find the number of friends she shared the chocolate with.

➤ First step:

____

____

➤ Second step:

____

____

1 whole

b) Nabil had a long rope. He divided it into eight equal parts. He gave his brother 2 parts and his father 2 parts. What is the fraction of the rope that represents the part which is left with him?

1 whole

➤ First step:

____

____

➤ Second step:

____

____

➤ Third step:

____

____

Activity 3 Read, then solve:

a) Reda needs to distribute 81 candies among his 9 friends. How many candies will each friend take?

> The number of candies each friend will take = ... candies.

b) Rasha wants to plant blue roses in her rectangular garden. If the length of the garden is 8 m and its width is 4 m, find the perimeter of her garden.

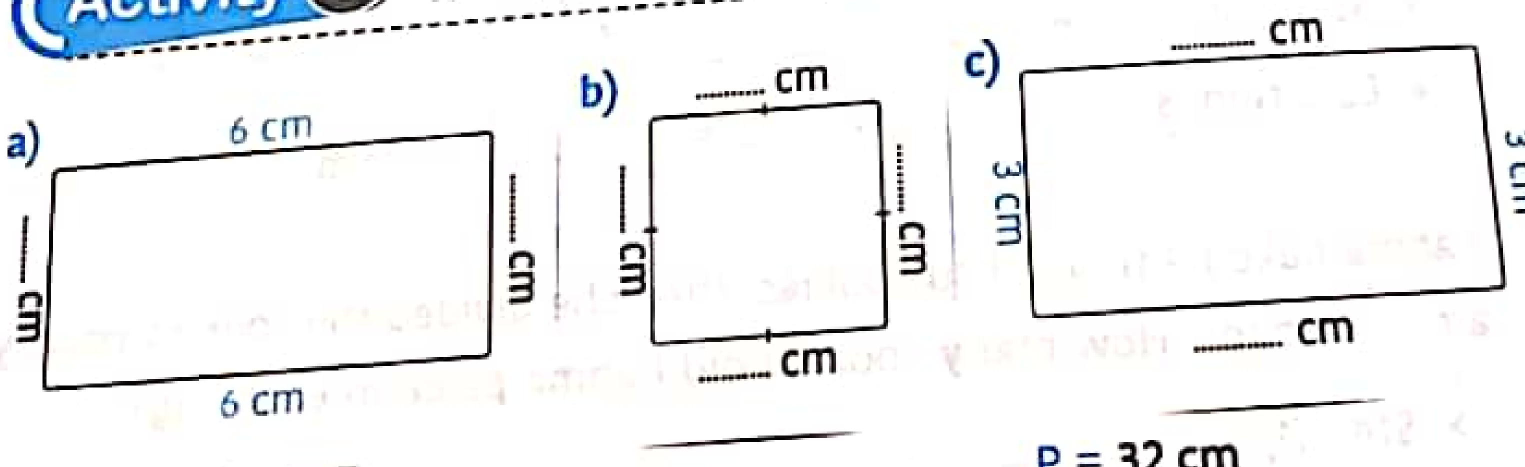
> Perimeter = ...

= ....

c) Mahmoud was running around the fence of his square-shaped backyard. If the perimeter of his backyard is 24 m, find the length of one of its sides.

> Side length = ...

Activity 4 Read, then solve:



a) $P = 18$ cm
Width = ... cm

b) $P = 24$ cm
Side length = ... cm

c) $P = 32$ cm
Length = ... cm

Activity ... fractions:

a) $\frac{9}{__}$

b) $\frac{__}{8}$

c) $\frac{2}{__}$

d) $\frac{3}{__}$

e) $\frac{__}{10}$

f) $\frac{8}{__}$

Activity 4 Read and draw, then solve:

a) Rania saw 12 birds on a tree, $\frac{1}{6}$ of them flew away. How many birds were left on the tree?

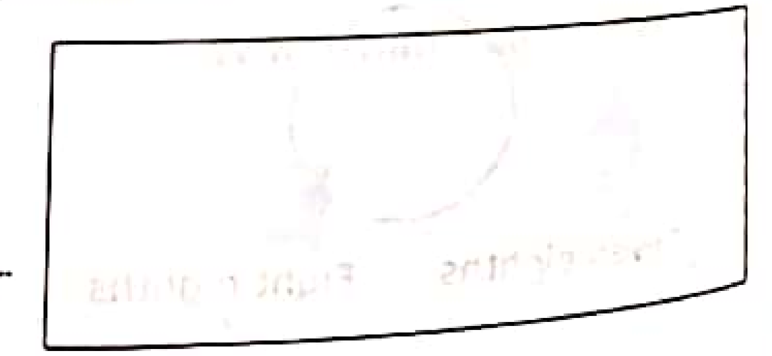
➤ ____________ birds are left.

Because ____________ = ____________

b) Khaled got 8 presents for his birthday and opened $\frac{1}{2}$ of them only. How many presents are left with him?

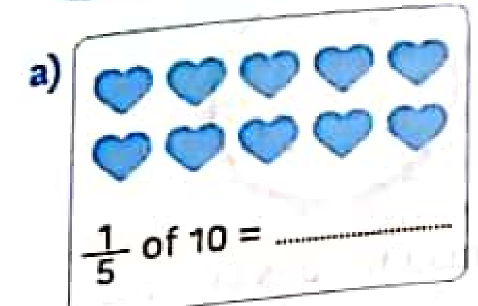
➤ ____________ presents are left.

Because ____________ = ____________



Circle the number of objects which represent the fraction in each set, then complete:

a)

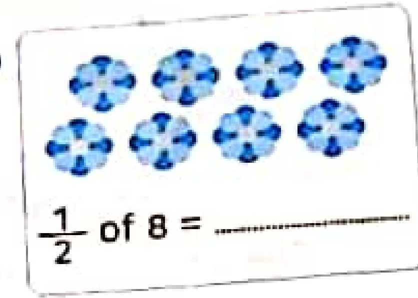


$\frac{1}{5}$ of 10 = ...

b)

$\frac{1}{3}$ of 12 = ...

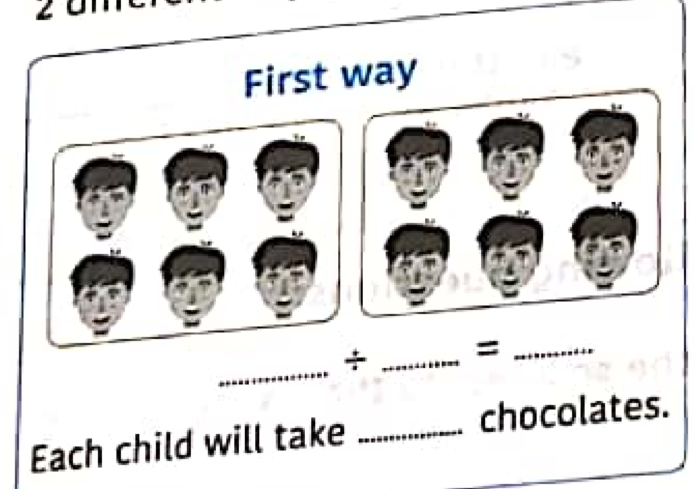
c)



$\frac{1}{2}$ of 8 = ...

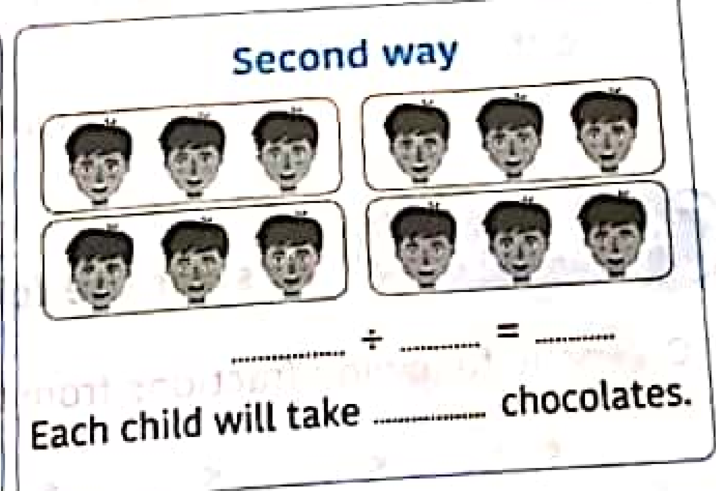
Activity 2 **Read, then solve:**

a) Divide the 12 pieces of chocolates equally among the given groups using 2 different ways:



.... ÷ .... = ...

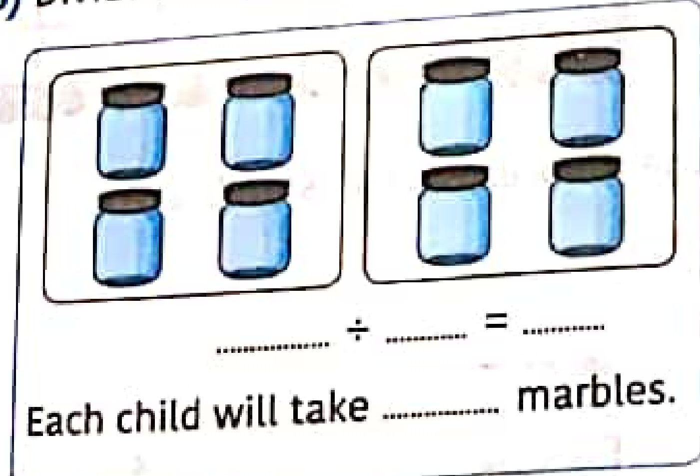
Each child will take .... chocolates.



.... ÷ .... = ...

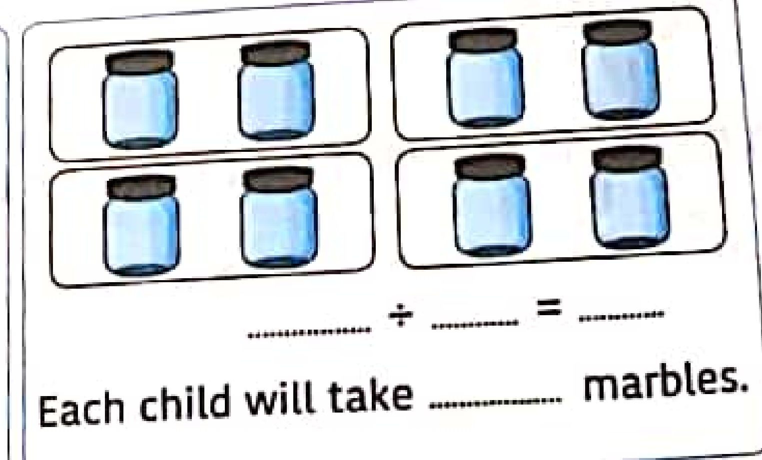
Each child will take .... chocolates.

b) Divide 8 marbles equally among the given groups using 2 ways:



.... ÷ .... = ...

Each child will take .... marbles.



.... ÷ .... = ...

Each child will take .... marbles.

Activity 1 Write the following numbers in their standard form:

a) Five hundred thousand, two hundred and ten = ...

b) 600, 000 + 3000 + 10 + 8 = ...

c) 700 hundreds = ...

d) Forty thousand and sixteen = ...

e) 45 hundreds + 200 tens + 4 ones = ...

f) 17 thousands + 3 tens = ...

g) 8 thousands + 50 hundreds + 40 tens = ...

h) 3 hundred thousands + 8 tens = ...

Activity 2 Tick (✔) to choose:

a) Which of the following is in order from the least to the greatest?

☐ 30000, 218500, 300512, 410000

☐ 510218, 4090, 108314, 21500

☐ 300000, 4100, 678000, 12400

b) Which of the following is in order from the greatest to the least?

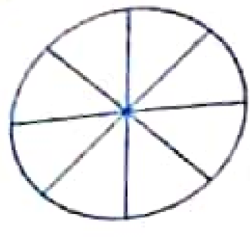
☐ 4001, 2056, 4105689, 400001

☐ 621000, 108005, 89024, 9125

☐ 38521, 58963, 200354, 1074

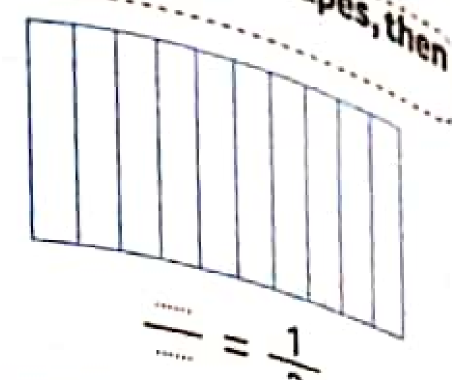
Shade exactly one half of the given shapes, then complete:

a)

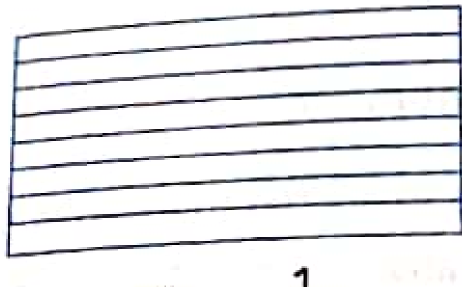


$\frac{\dots}{\dots} = \frac{1}{2}$

b)

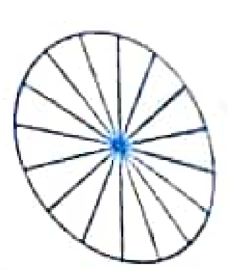


$\frac{\dots}{\dots} = \frac{1}{2}$

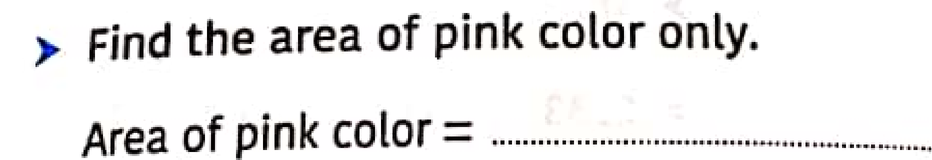


$\frac{\dots}{\dots} = \frac{1}{2}$

d)



$\frac{\dots}{\dots} = \frac{1}{2}$



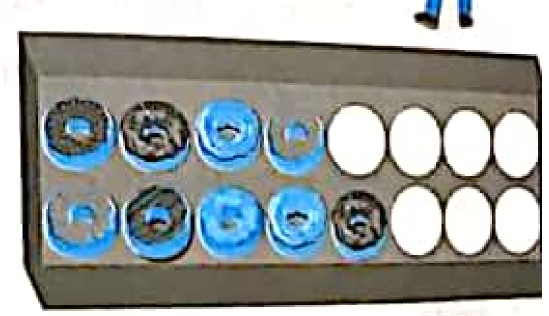
Read, then solve:

a) Noha wants to paint her rectangular wall in her bedroom equally using pink and blue colors. Her wall is 7 meters by 6 meters.

- Find the area of pink color only.

Area of pink color = ...

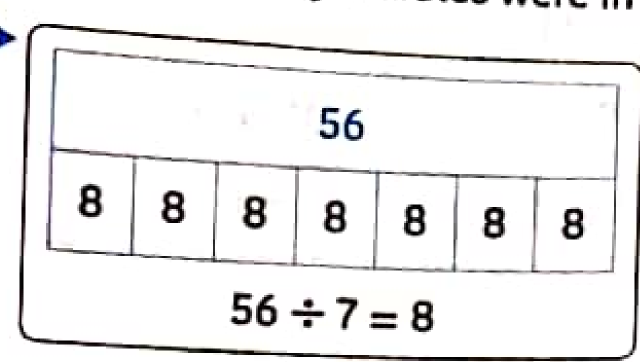
b) Waleed had a mini-doughnut box. When he opened it, he thought that his brother ate half of the doughnuts. Do you agree with him?

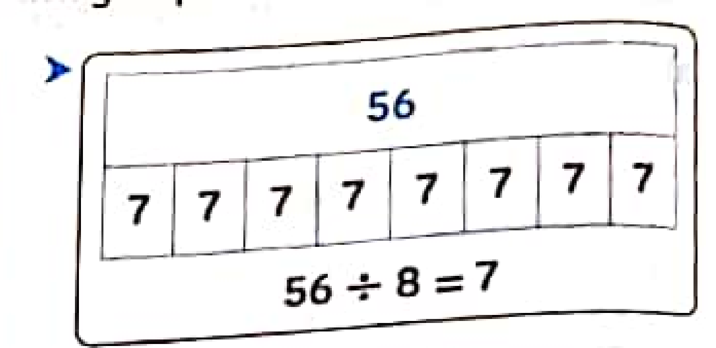


....

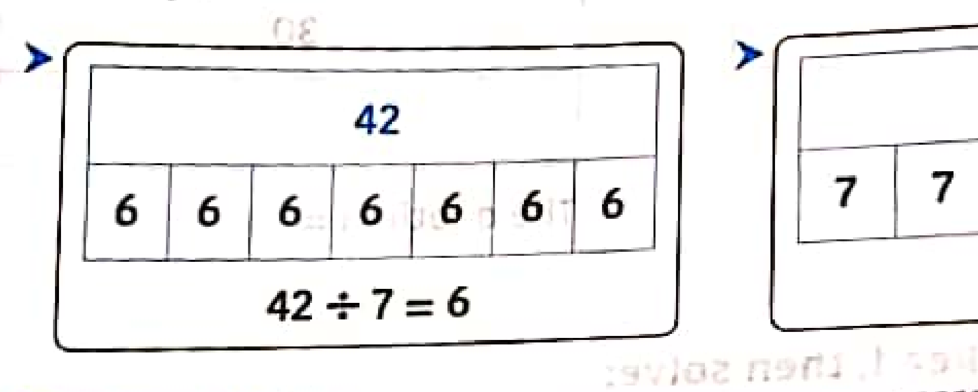
Activity 3 Read, then tick (✓) to choose the right answer:

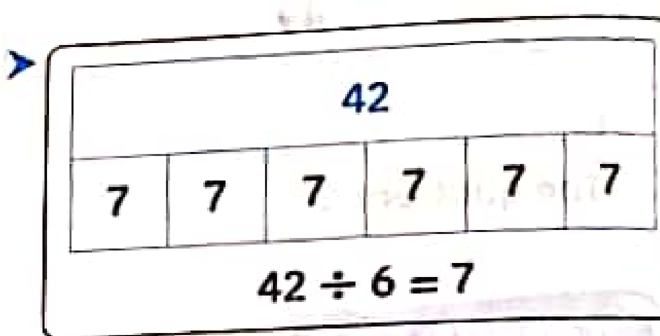
a) Karim removed 56 marbles from his marbles box and put them into 8 equal groups. How many marbles were in each group?





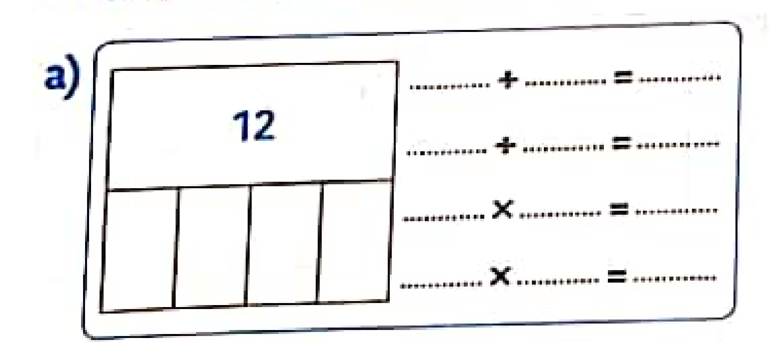
b) Nora sent an equal number of messages each day for one week. At the end of the week, she had sent 42 messages. How many messages did she send each day?





Activity 4 Complete:

a)



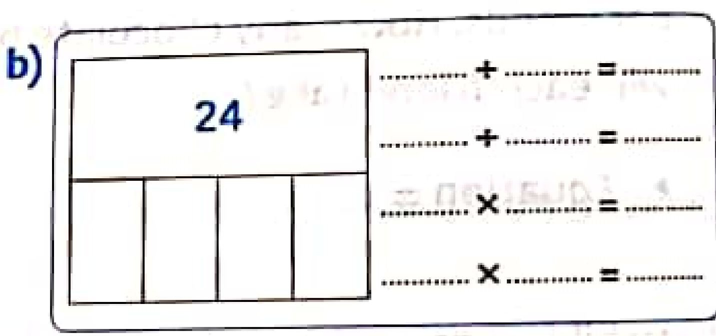
.... + ... = ...

.... + ... = ...

.... × .... = ...

.... × .... = ...

b)



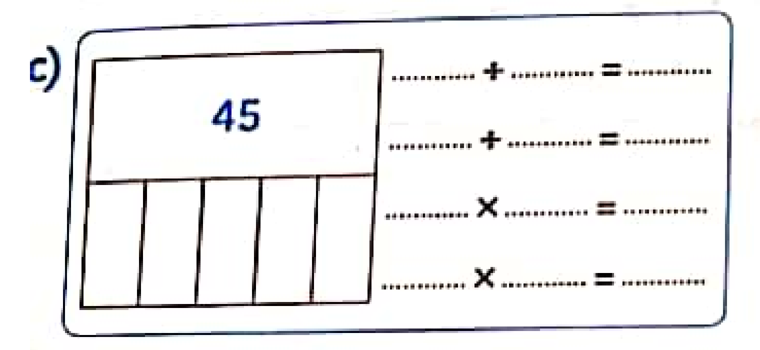
.... + ... = ...

.... + ... = ...

.... × .... = ...

.... × .... = ...

c)



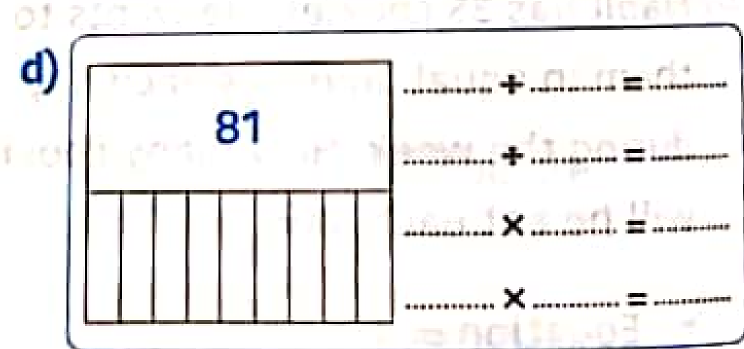
.... + ... = ...

.... + ... = ...

.... × .... = ...

.... × .... = ...

d)



.... + ... = ...

.... + ... = ...

.... × .... = ...

.... × .... = ...

Activity 3

Calculate the area and the perimeter of the following places in the big festival:

Roller coaster:

Area = ……………

Perimeter = ……………

Circus:

Area = ……………

Perimeter = ……………

Tickets:

Area = ……………

Perimeter = ……………

Food corner:

Area = ……………

Perimeter = ……………

Restrooms:

Area = ……………

Perimeter = ……………

Games:

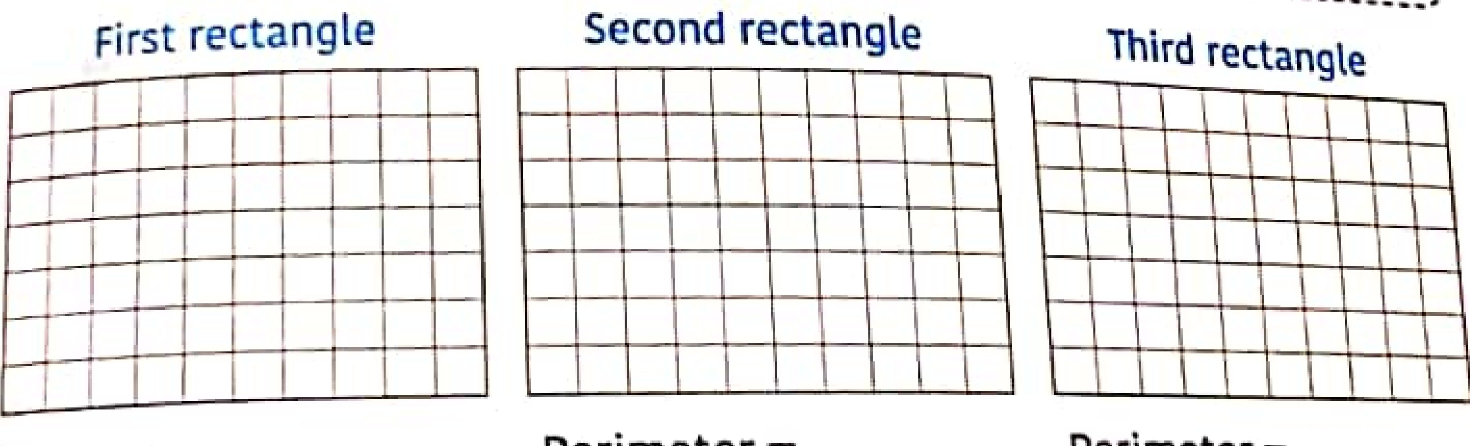
Area = ……………

Perimeter = ……………

Activity 4

Draw 3 different rectangles with an area of 18 cm^2 each, then complete:

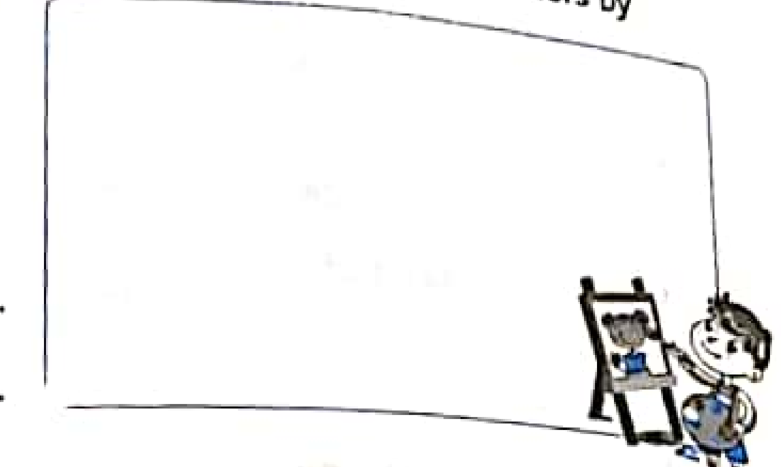
First rectangle   Second rectangle   Third rectangle



Perimeter = ……………   Perimeter = ……………   Perimeter = ……………

Activity 3 Read, then draw to solve the following:

Akram and Anwar are two farmers. Each one of them has a rectangular farm. If Akram's farm is 6 meters by 3 meters while Anwar's farm is 4 meters by 3 meters. Draw the two rectangles side by side to make one long rectangle, then find its perimeter and area.

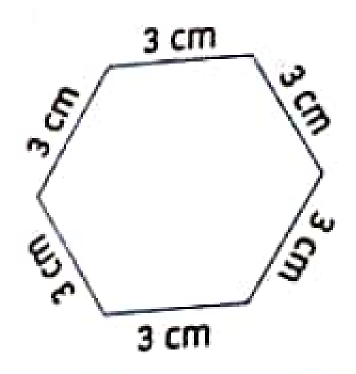


› Perimeter: ....

› Area: ....

Activity 4 Read and draw, then find:

a) Find the perimeter of the following hexagon, then draw a triangle with the same perimeter.

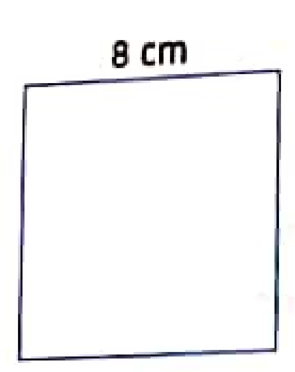


Perimeter: ....

Triangle

Perimeter: ....

b) Find the perimeter of the following square, then draw an octagon with the same perimeter.



Perimeter: ....

Octagon

Perimeter: ....

Activity 1 Use the following data to form a line plot:

- The following table represents the goals of some players in the game of water polo during the competition between El Ahly Club and Shooting Club:

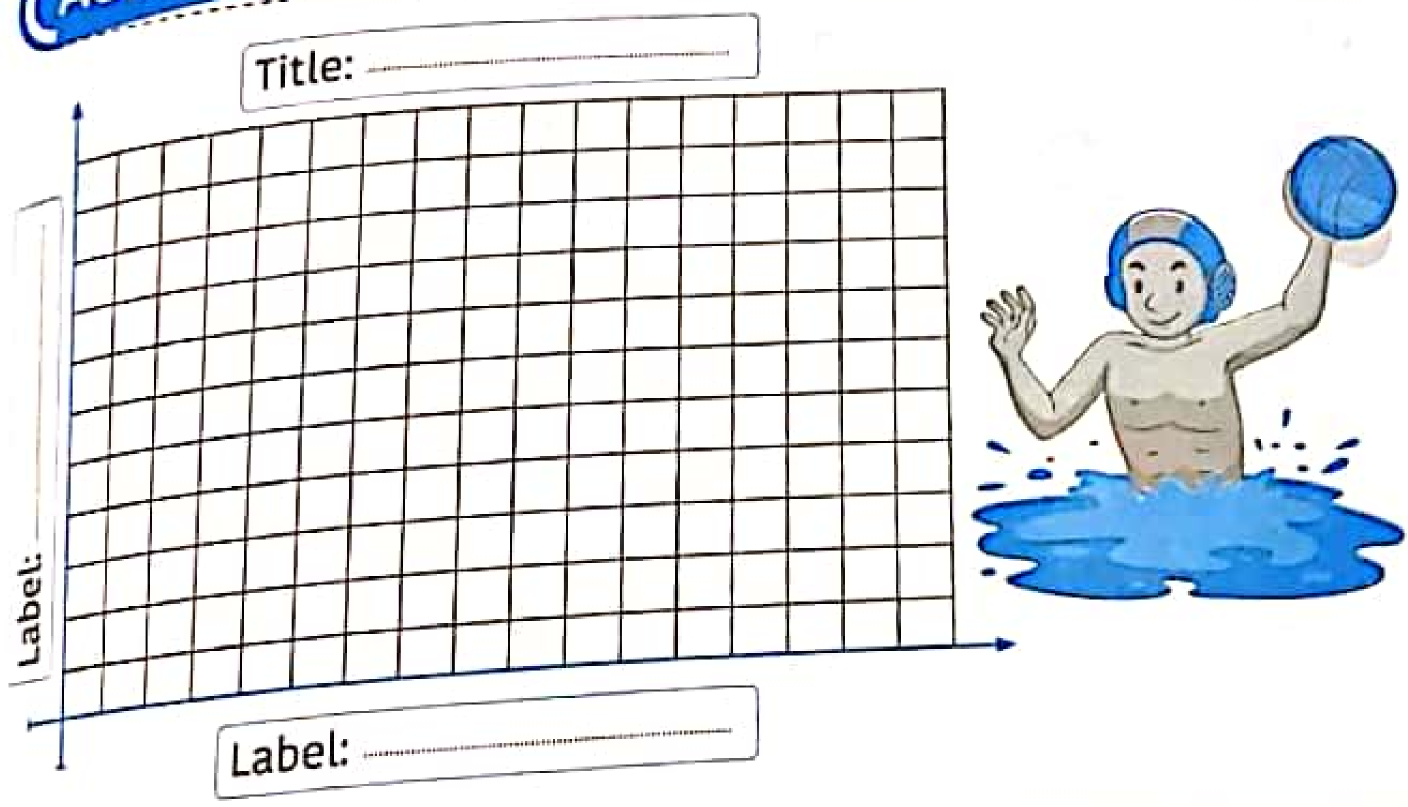
Players	Tallies
Ahmed	卌 /
Yassin	卌 卌 卌
Karim	卌 卌
Amar	卌 卌

Line plot

Title: ....

Key: each X'S represents ....

Activity 2 Use the above data to form a bar graph:



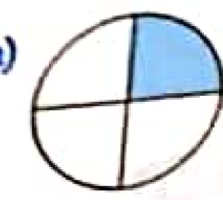
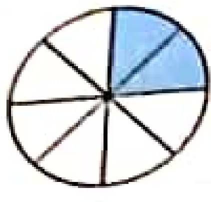
- Which scale did you use? ....

- Which player scored the most number of goals?

....

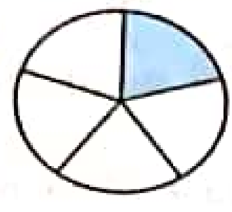
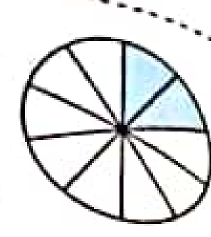
Activity 3 Color to find the equivalent fractions:

a)

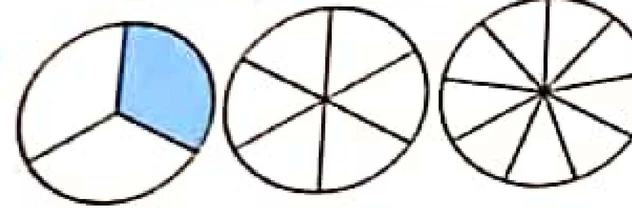
$\frac{\cdots}{\cdots} = \frac{\cdots}{\cdots}$

b)

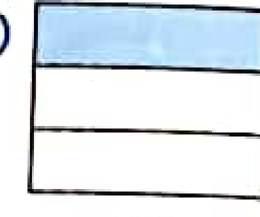
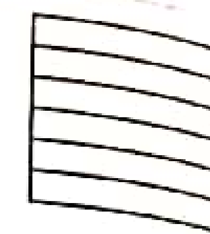
$\frac{\cdots}{\cdots} = \frac{\cdots}{\cdots}$

c)



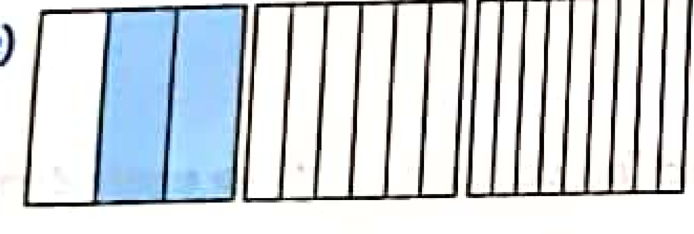
$\frac{\cdots}{\cdots} = \frac{\cdots}{\cdots} = \frac{\cdots}{\cdots}$

d)

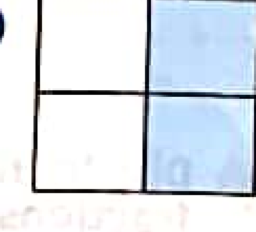
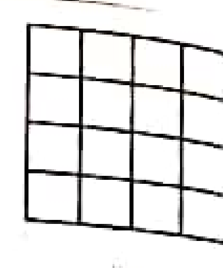
$\frac{\cdots}{\cdots} = \frac{\cdots}{\cdots}$

e)



$\frac{\cdots}{\cdots} = \frac{\cdots}{\cdots} = \frac{\cdots}{\cdots}$

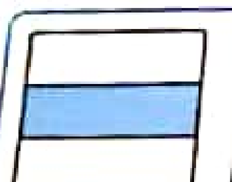
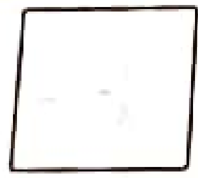
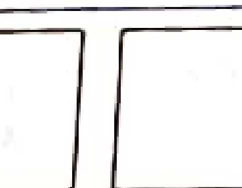
f)

$\frac{\cdots}{\cdots} = \frac{\cdots}{\cdots}$

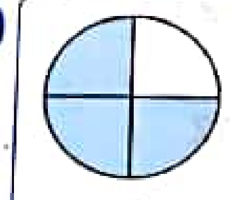
Activity 4 Divide, then color to represent the equal fractions:

a)

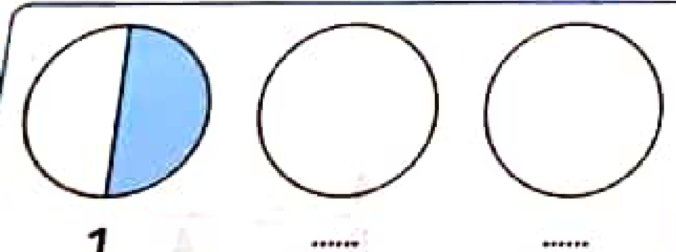
$\frac{1}{3} = \frac{\cdots}{6} = \frac{\cdots}{9}$

b)



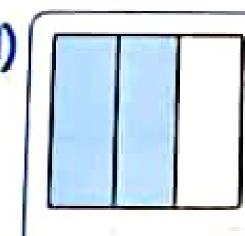
$\frac{3}{4} = \frac{\cdots}{8} = \frac{\cdots}{16}$

c)



$\frac{1}{2} = \frac{\cdots}{4} = \frac{\cdots}{8}$

d)



$\frac{2}{3} = \frac{\cdots}{12} = \frac{\cdots}{15}$

Activity 1

Read, then solve:

a) Nadia needs to put 80 crayons in her crayon boxes. If each crayon box contains only 8 crayons, How many crayon boxes does she need?

....

....

➤ She needs .... crayon boxes.

b) The coach Khaled needs to divide 42 children into teams of 6 each. How many teams will he have?

....

....

➤ He will have .... teams.

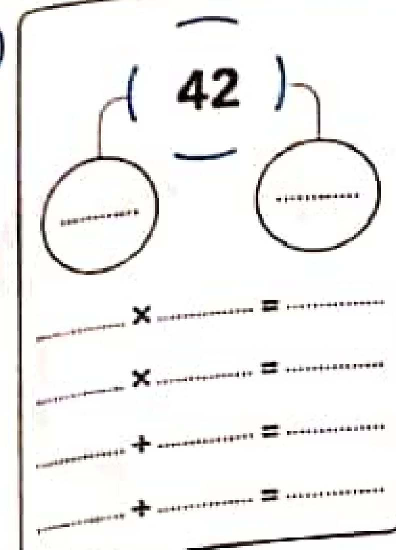
Use the following equation to form your own multiplication and division story problems:

63 ÷ .... = 7

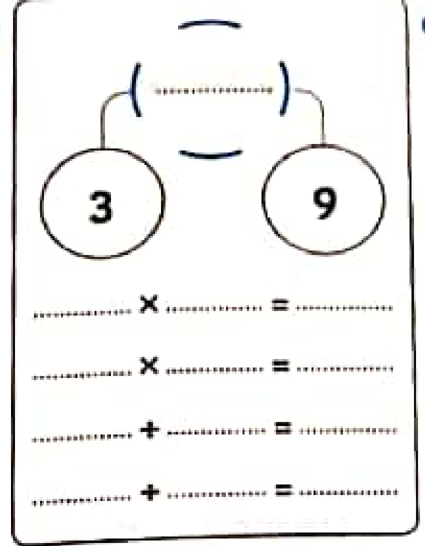
Multiplication story problem:	Division story problem:
....	....
....	....
....	....
....	....
....	....

Activity 3 Use the given numbers to form each fact family:

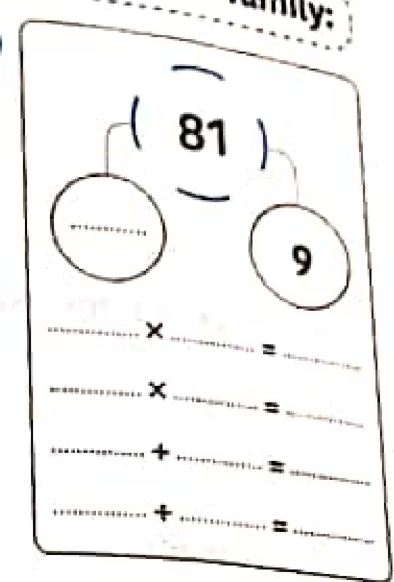
a)



b)



c)



Activity 4 Solve each equation, then match between the fact families:

a) 5 × .... = 10 ○ ○ 6 × 4 = ...

b) 24 ÷ .... = 4 ○ ○ 3 × 9 = ...

c) .... × 3 = 18 ○ ○ 5 × .... = 45

d) 27 ÷ .... = 3 ○ ○ 6 × .... = 18

e) .... × .... = 45 ○ ○ 10 ÷ 2 = ...

Chapter 4

Sheet 4

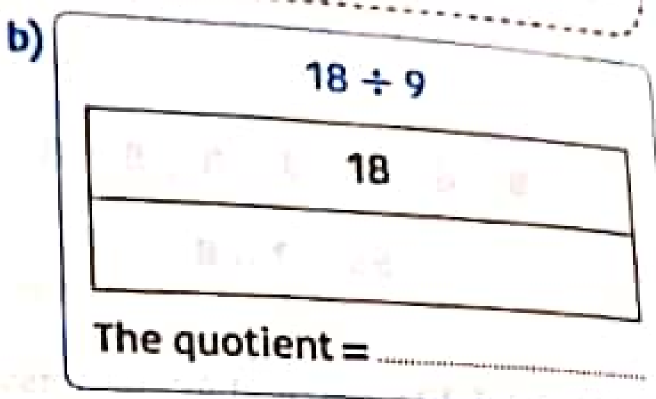
Activity 1 Represent the following division equations using the given bar models:

a) $24 \div 6$

24

The quotient = ...

b)

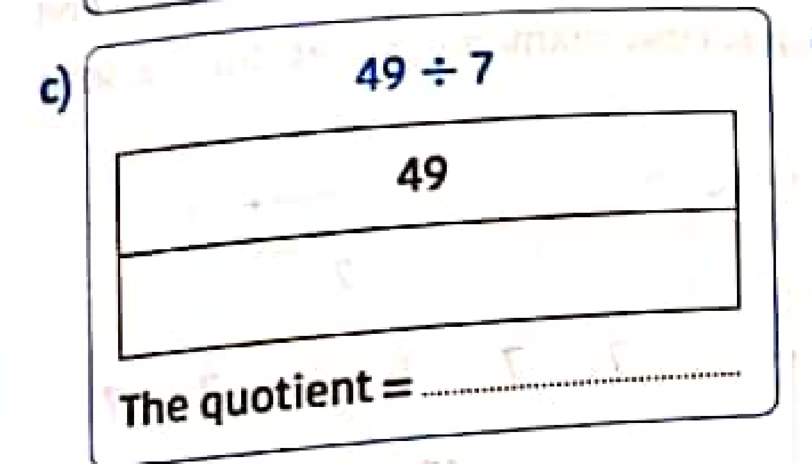


$18 \div 9$

18

The quotient = ...

c)

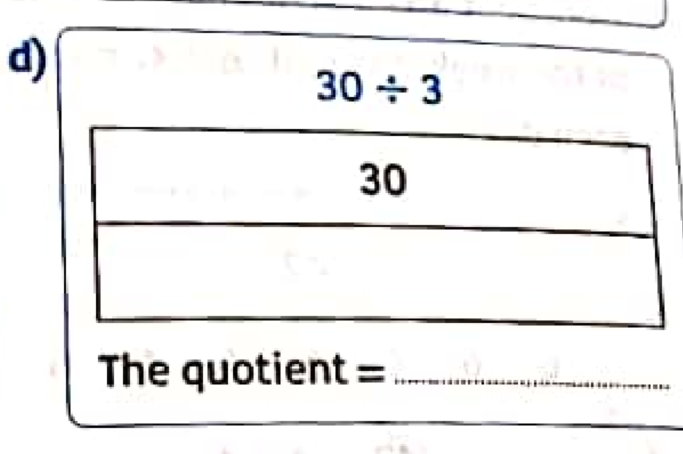


$49 \div 7$

49

The quotient = ...

d)



$30 \div 3$

30

The quotient = ...

Activity 2 Read, then solve:

a) Noha bought 16 chocolate bars. She needs to distribute them among 4 of her friends. How many chocolate bars will each friend take?

16

› Equation = ...

b) Nabil has 35 cookies. He wants to eat them in equal amounts each day during the week. How many cookies will he eat each day?

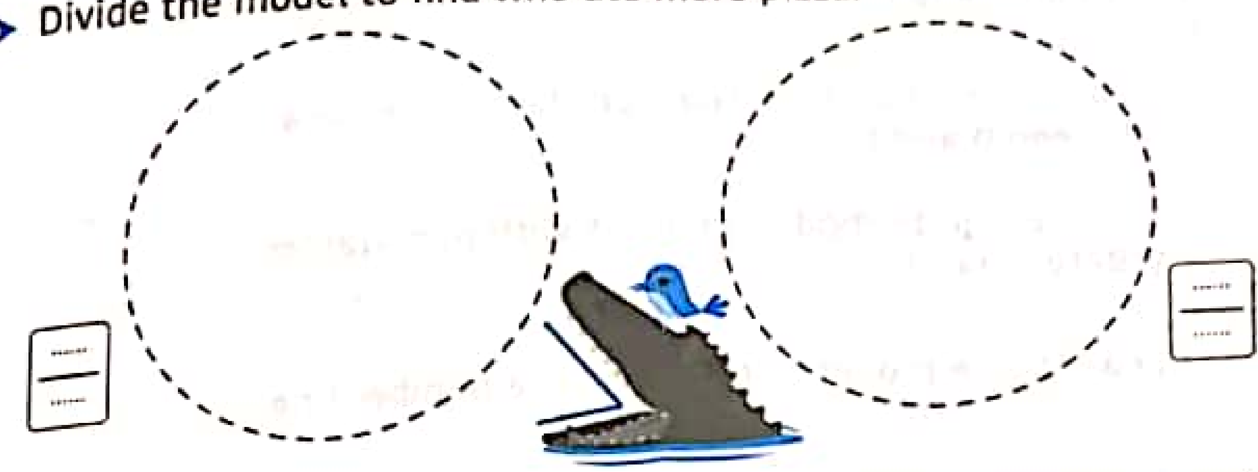
35

› Equation = ...

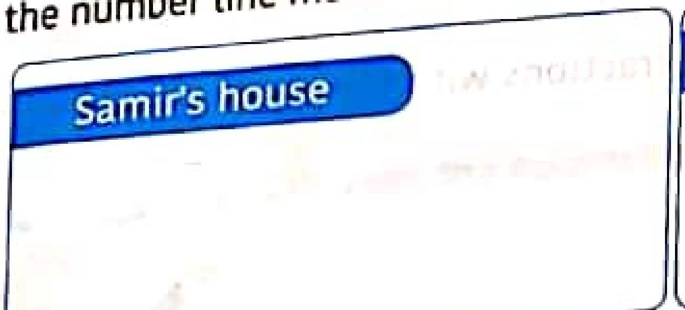
Read, then draw a picture model or number line to represent your answer:

a) Mariam had a pizza that was divided into 8 equal parts, she ate 3 of them while Sherif had a pizza that is in the same size, but he divided it into 4 equal parts and he ate 3 of them.

➤ Divide the model to find who ate more pizza.



b) There was a fire at a shop. If Samir's house is $\frac{1}{6}$ kilometer away from fire station while Nada's house is $\frac{4}{6}$ kilometers away from fire station, use the number line model to find which one will arrive first to the fire station.



Nada's house

➤ .... will arrive first.

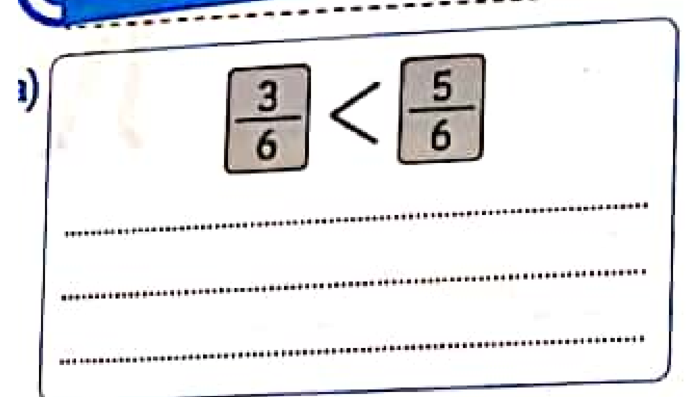
Activity 4 **Write your own story problem to prove the following:**

a) $\frac{3}{6} < \frac{5}{6}$

....

....

....



b) $\frac{8}{8} > \frac{1}{8}$

....

....

....

Chapter 4

Sheet 1

Activity 1 Find the equivalent fractions using fraction strips:

a)

$\frac{1}{2}$		$\frac{1}{2}$	

$\frac{1}{2} = \frac{\cdots}{4}$

b)

$\frac{1}{2}$			$\frac{1}{2}$		

$\frac{1}{2} = \frac{\cdots}{6}$

c)

$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	

$\frac{1}{3} = \frac{\cdots}{6}$

d)

$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	

$\frac{1}{4} = \frac{\cdots}{8}$

e)

$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$	

$\frac{1}{5} = \frac{\cdots}{10}$

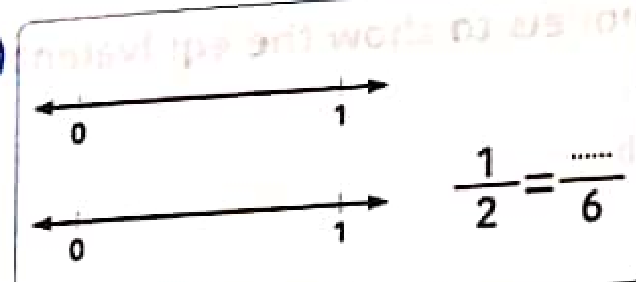
f)

$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$	

$\frac{1}{6} = \frac{\cdots}{12}$

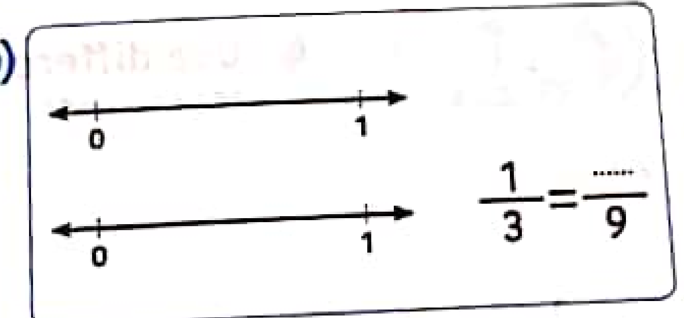
Activity 2 Find the equivalent fractions using the number line:

a)



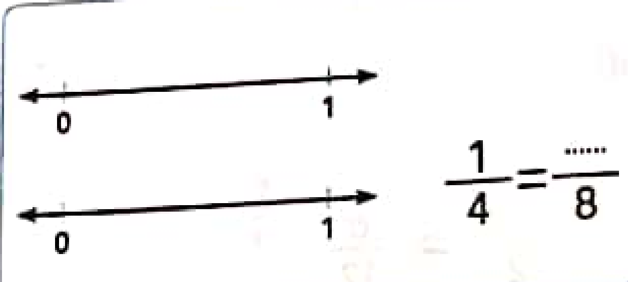
$\frac{1}{2} = \frac{\cdots}{6}$

b)



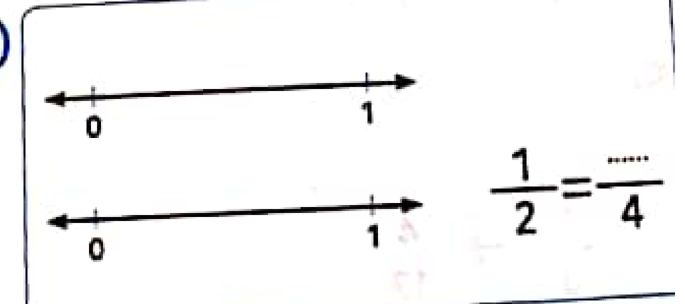
$\frac{1}{3} = \frac{\cdots}{9}$

c)



$\frac{1}{4} = \frac{\cdots}{8}$

d)

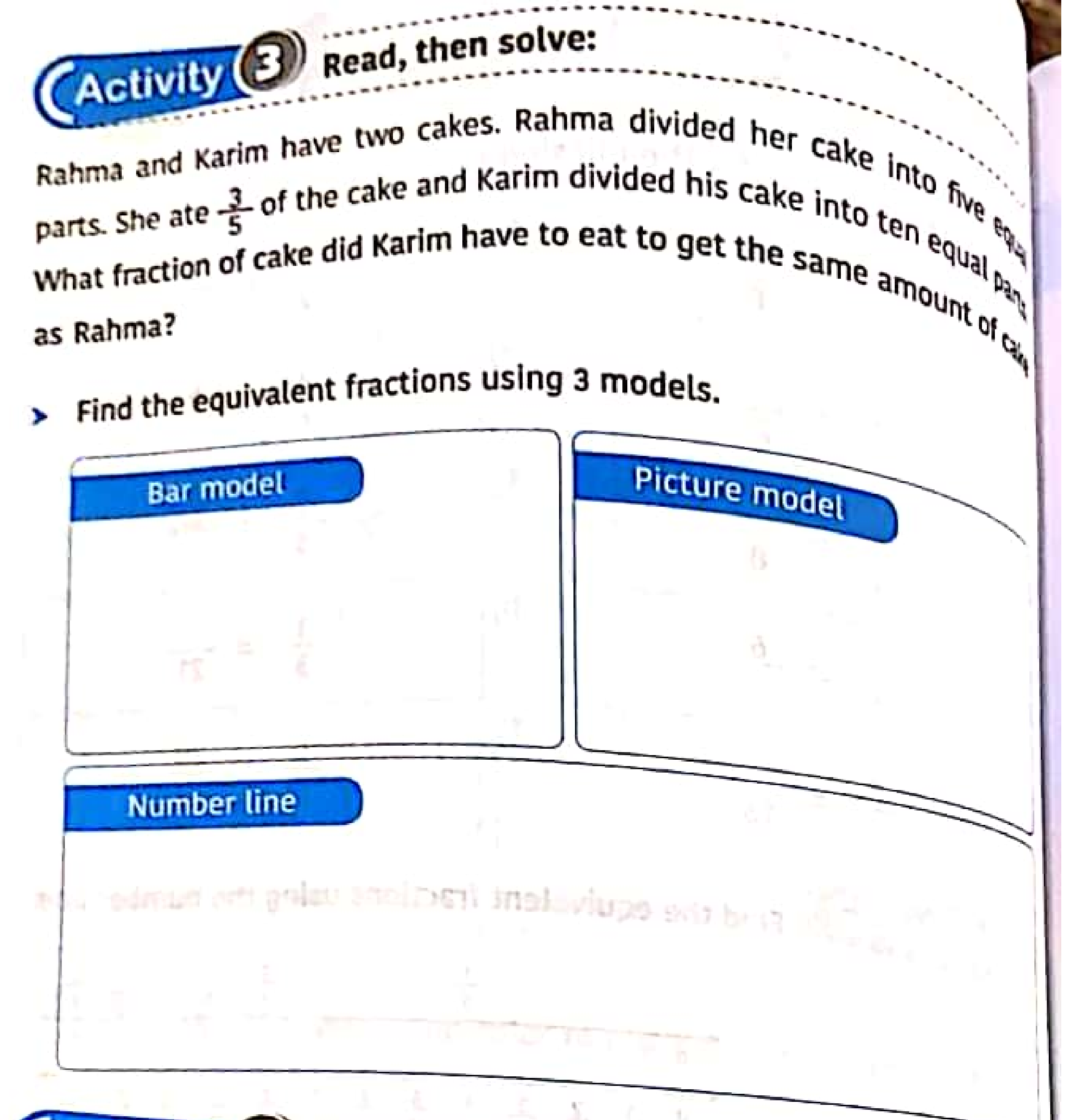


$\frac{1}{2} = \frac{\cdots}{4}$

Activity 3 Read, then solve:

Rahma and Karim have two cakes. Rahma divided her cake into five equal parts. She ate $\frac{3}{5}$ of the cake and Karim divided his cake into ten equal parts. What fraction of cake did Karim have to eat to get the same amount of cake as Rahma?

- Find the equivalent fractions using 3 models.



Activity 4 Read, then choose to solve:

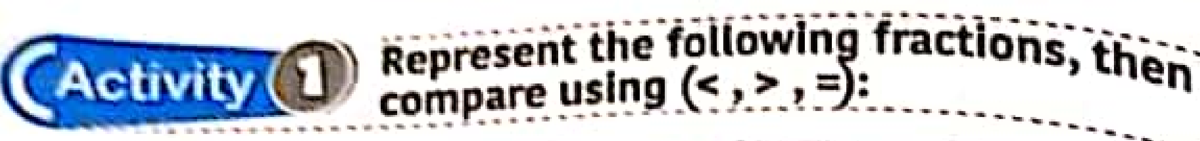
a) Mr Ahmed had L.E. 10. He needed to divide them equally among his 5 children. What is the share of each child?

- L.E. 7
- L.E. 5
- L.E. 2

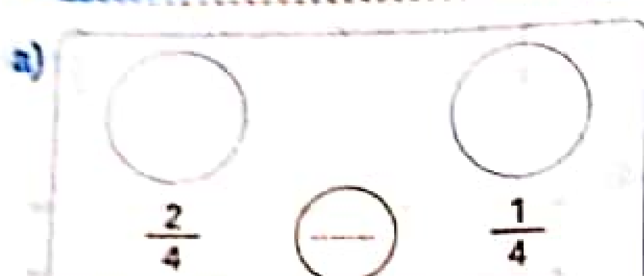
b) Laila had 36 candies in her box. She needed to share them equally among her 6 friends. How many candies will each friend take?

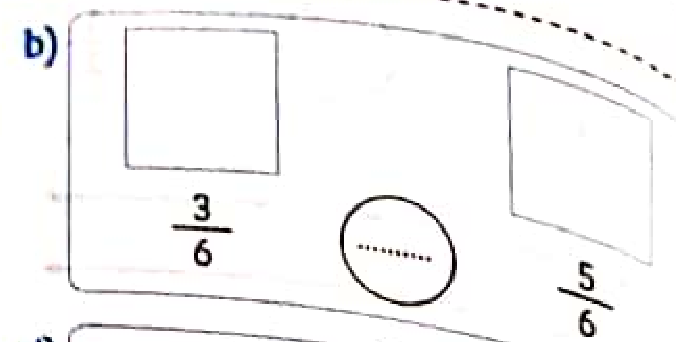
- 6 candies.
- 12 candies.
- 16 candies.

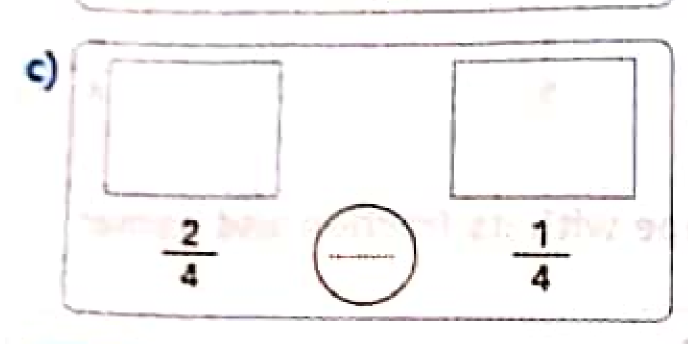
Sheet 2

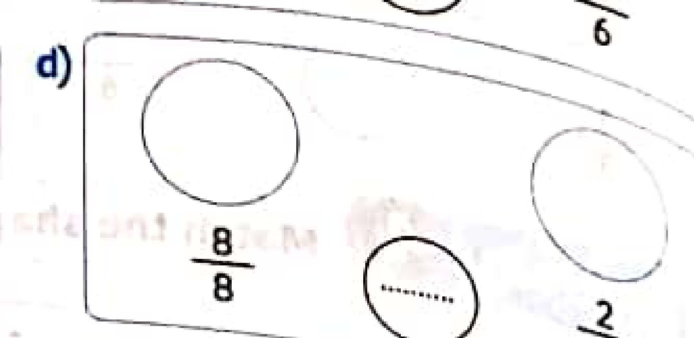


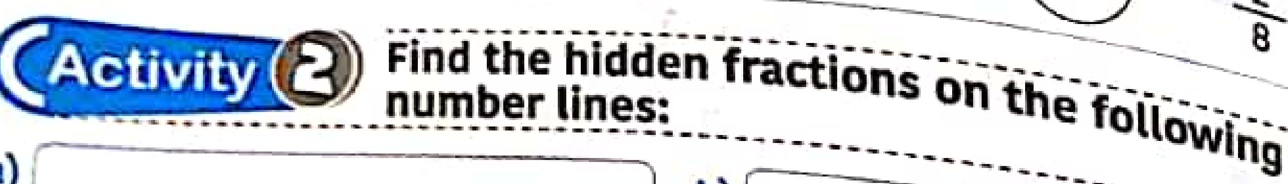
Activity 1 Represent the following fractions, then compare using (< , > , =):

a)

$\frac{2}{4}$ ...... $\frac{1}{4}$

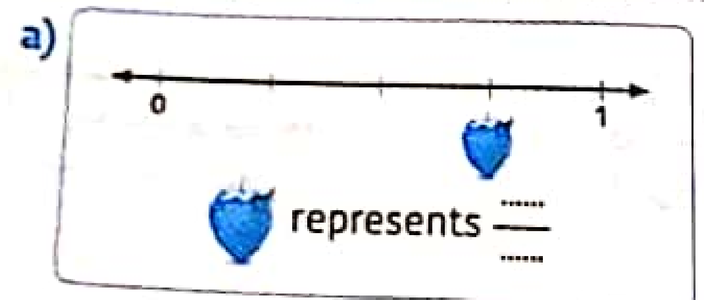
b)

$\frac{3}{6}$ ...... $\frac{5}{6}$

c)

$\frac{2}{4}$ ...... $\frac{1}{4}$

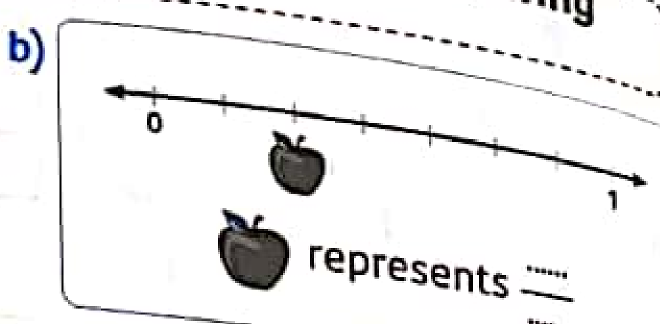
d)

$\frac{8}{8}$ ...... $\frac{2}{8}$



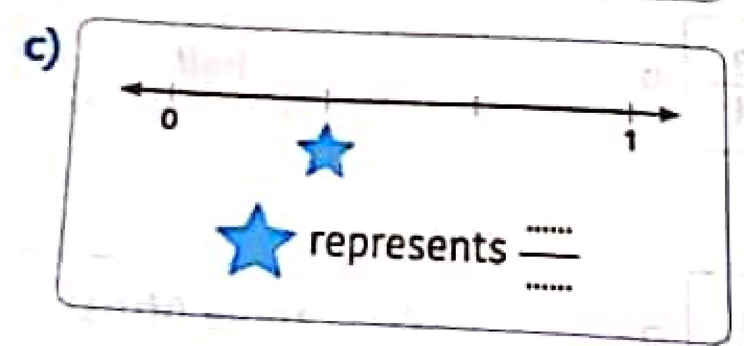
Activity 2 Find the hidden fractions on the following number lines:

a)


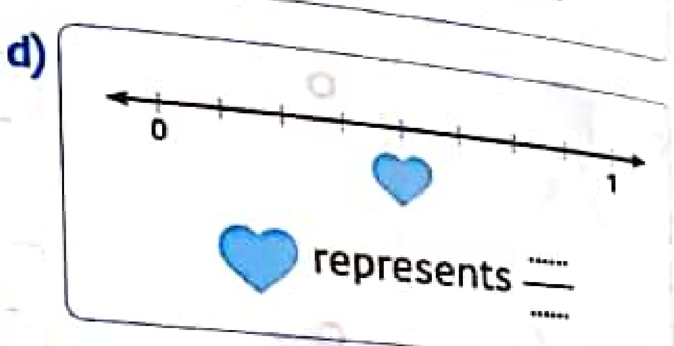
represents $\frac{......}{......}$

b)


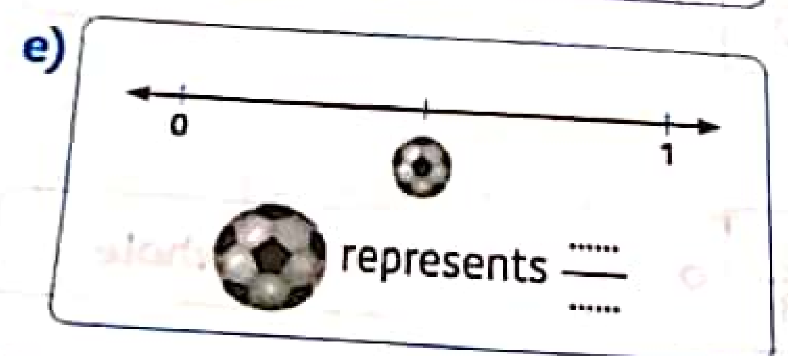
represents $\frac{......}{......}$

c)


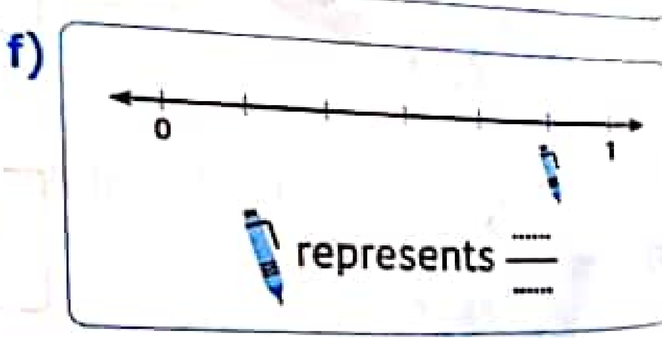
represents $\frac{......}{......}$

d)


represents $\frac{......}{......}$

e)


represents $\frac{......}{......}$

f)


represents $\frac{......}{......}$

Activity 1 Tick (✔) to choose the right answer:

a) The greatest number that can be formed from (8, 0, 9, 0, 9, 3):

- ☐ 909830
- ☐ 990830
- ☐ 998300
- ☐ 990083

b) The smallest number that can be formed from (1, 0, 1, 2, 0, 5):

- ☐ 100125
- ☐ 00125
- ☐ 010125
- ☐ 12500

c) Mr Ahmed starts his work at 8:00 am, he works for 5 hours. When does he finish his work?

- ☐ 1:00 a.m
- ☐ 12:00 p.m
- ☐ 12:00 a.m
- ☐ 1:00 p.m

d) Aida started her homework at 5:10 p.m. She finished at 8:20 p.m. How much time did she spend doing her homework?

- ☐ 2 hours and 10 minutes
- ☐ 3 hours and 10 minutes
- ☐ 5 hours
- ☐ 2 hours and 15 minutes

Activity 2 Measure the length of the following objects to the nearest half cm:

a) = ...

b) = ...

c) = ...

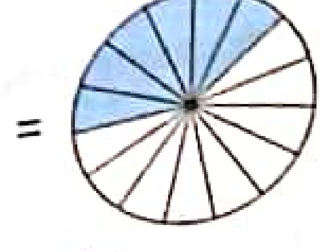
d) = ...

e) = ...

f) = ...

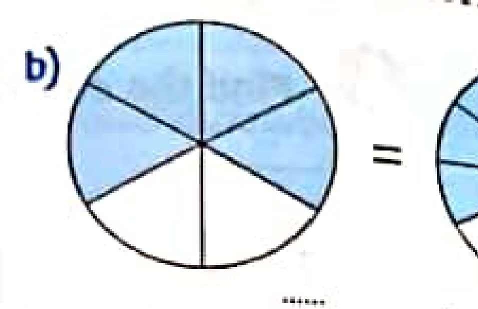
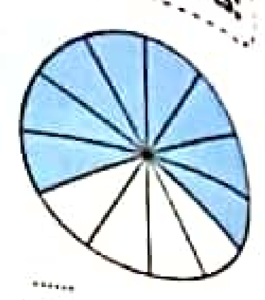
Activity 3 Find the equivalent fractions using picture models:

a)

= 

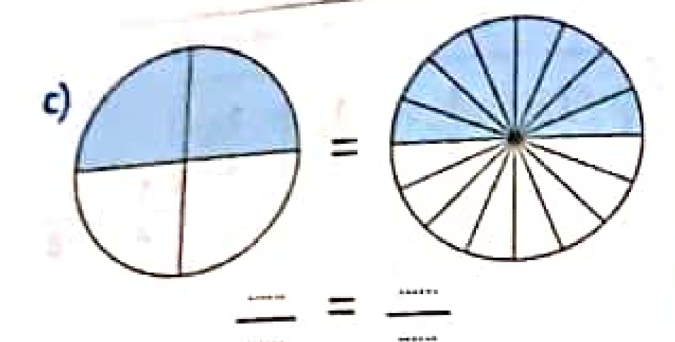
$\frac{......}{......} = \frac{......}{......}$

b)

 = 

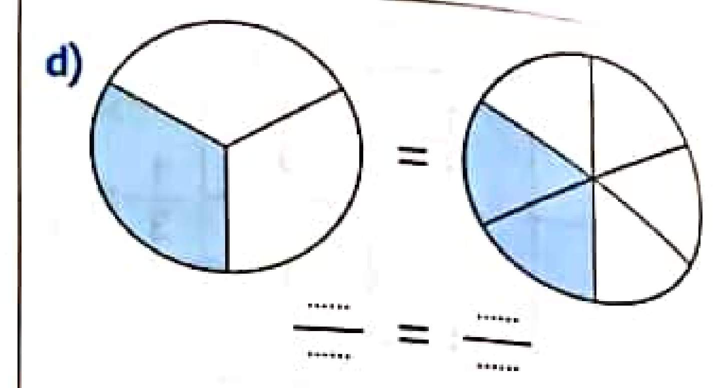
$\frac{......}{......} = \frac{......}{......}$

c)



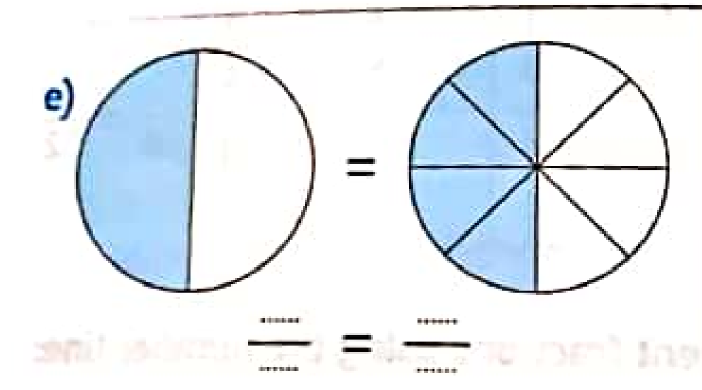
$\frac{......}{......} = \frac{......}{......}$

d)



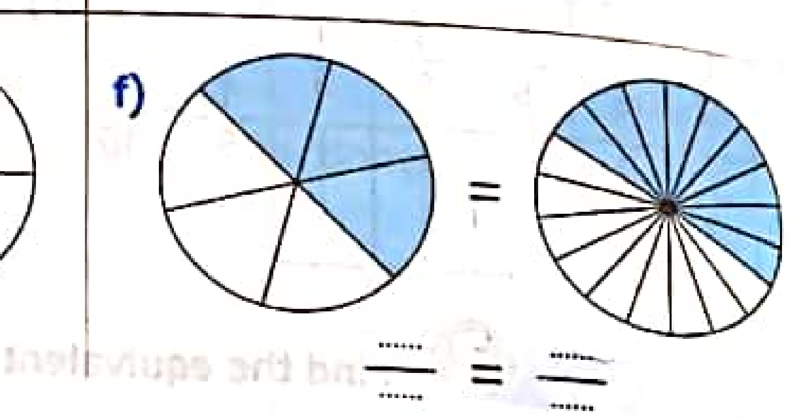
$\frac{......}{......} = \frac{......}{......}$

e)



$\frac{......}{......} = \frac{......}{......}$

f)



$\frac{......}{......} = \frac{......}{......}$

Activity 4 Use different models to show the equivalent fractions:

a) $\frac{1}{2} = \frac{4}{8}$

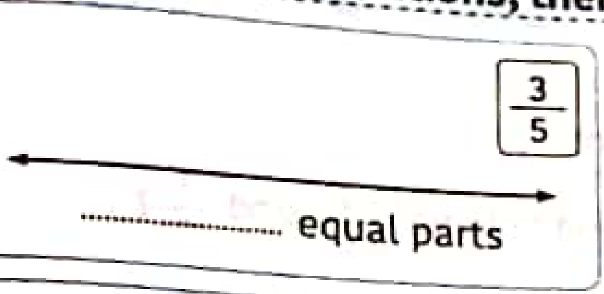
b) $\frac{1}{4} = \frac{2}{8}$

c) $\frac{1}{3} = \frac{4}{12}$

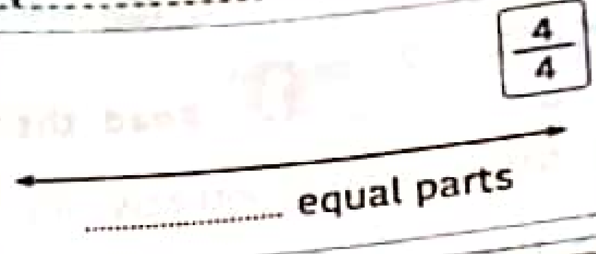
d) $\frac{1}{2} = \frac{6}{12}$

Activity 3 Divide the number lines to locate the following fractions, then complete:

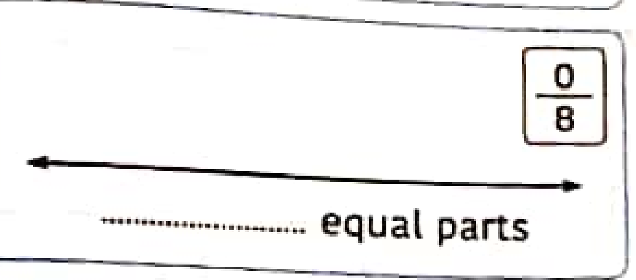
a)



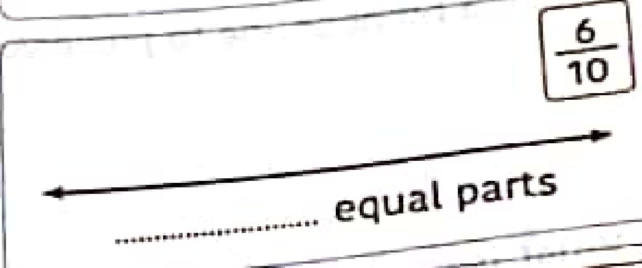
b)



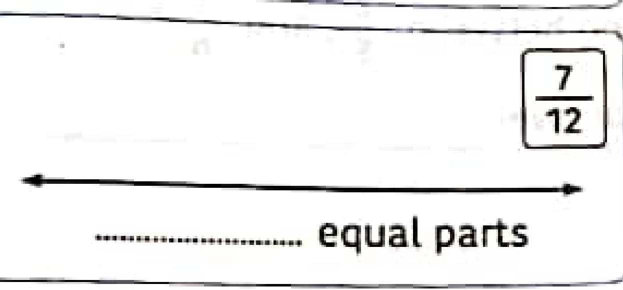
c)



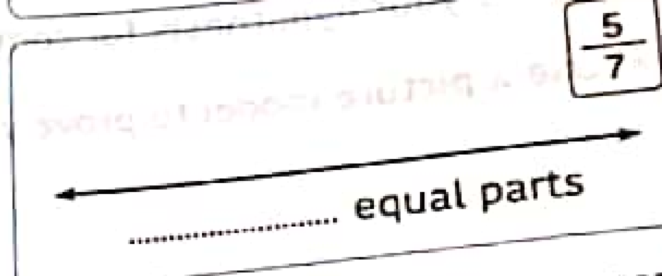
d)



e)

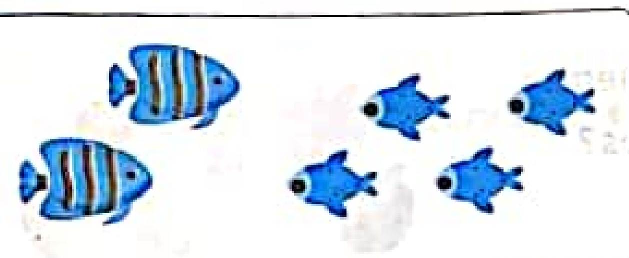


f)



Activity 4 Find the required fraction in the following sets:

a)

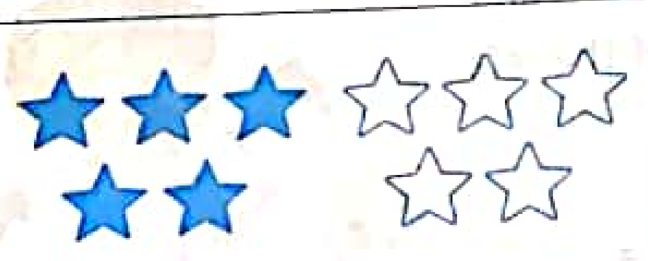


The fraction that represents the set of the small fish = $\frac{......}{......} = \frac{......}{......}$

b)

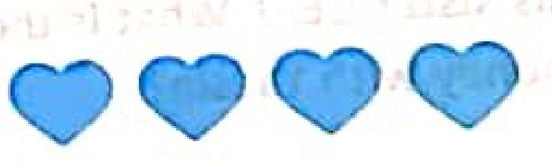
The fraction that represents the set of the keys = $\frac{......}{......} = \frac{......}{......}$

c)



The fraction that represents the set of the uncolored stars = $\frac{......}{......} = \frac{......}{......}$

d)



The fraction that represents the set of the colored hearts = $\frac{......}{......}$ = ...

Sheet 4

Activity 1 Complete the missing numbers:

a) $\frac{6}{7} - \frac{\dots}{7} = \frac{5}{7}$

b) $\frac{2}{6} + \frac{\dots}{6} = \frac{4}{6}$

c) $\frac{7}{9} + \frac{\dots}{9} = \frac{8}{9}$

d) $\frac{8}{8} - \frac{\dots}{8} = \frac{3}{8}$

e) $\frac{6}{10} - \frac{3}{10} = \frac{\dots}{\dots}$

f) $\frac{4}{7} + \frac{1}{7} = \frac{\dots}{\dots}$

g) $\frac{10}{12} + \frac{1}{12} = \frac{\dots}{\dots}$

h) $\frac{12}{12} - \frac{5}{12} = \frac{\dots}{12}$

i) $\frac{8}{9} + \frac{\dots}{9} = \frac{0}{9}$

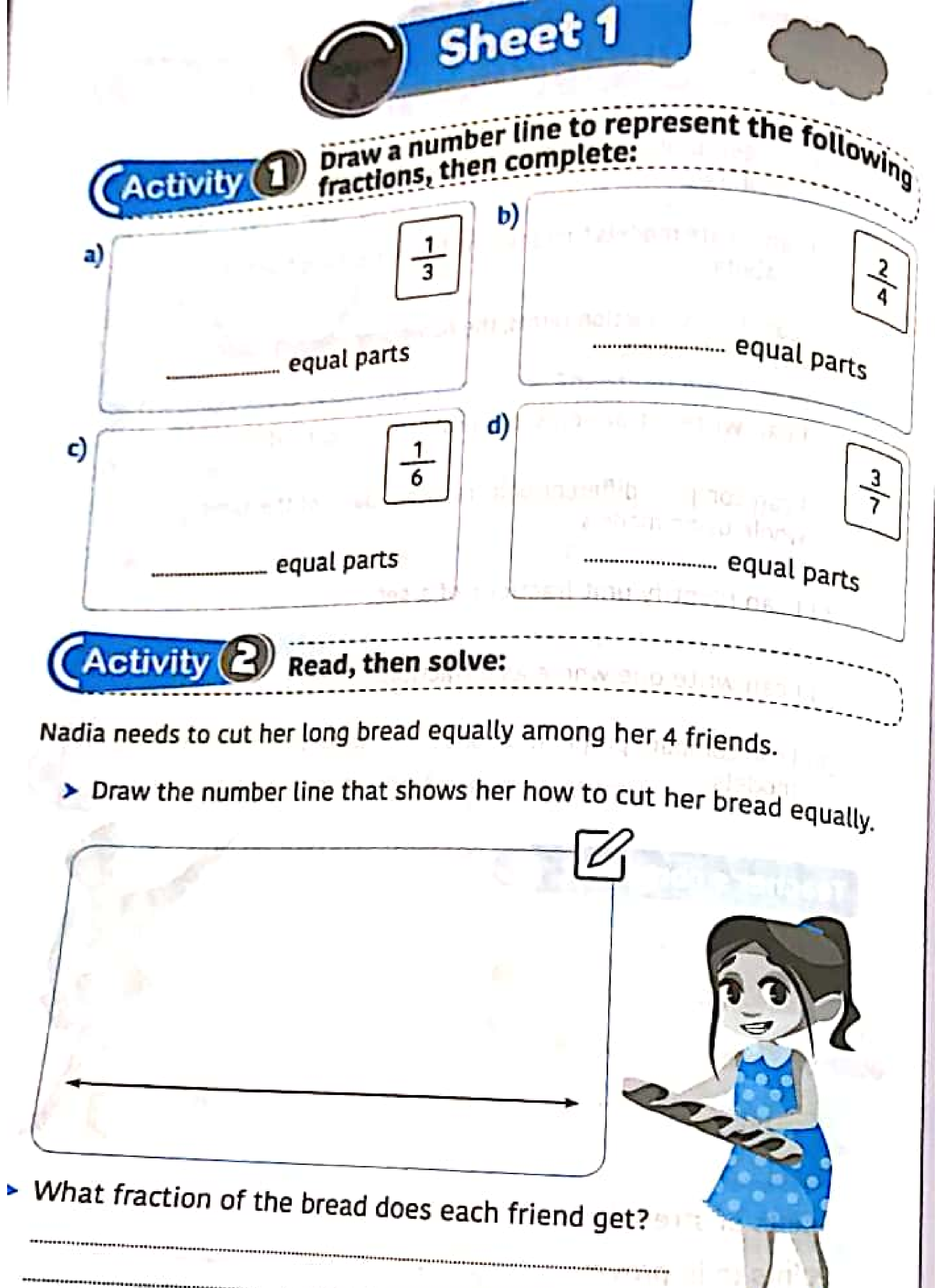
Activity 2 Read, then solve:

a) Sara picked $\frac{2}{9}$ of pears, while Ibrahim picked $\frac{4}{9}$ of pears. How many pears did they both pick?

➤ The total pears they picked = ...

b) Anwar divided his garden into 6 equal parts. If he planted $\frac{3}{6}$ of them, How many parts are left unplanted?

➤ The parts left unplanted = ...



Sheet 1

Activity 1 **Draw a number line to represent the following fractions, then complete:**

a) $\frac{1}{3}$

.... equal parts

b) $\frac{2}{4}$

.... equal parts

c) $\frac{1}{6}$

.... equal parts

d) $\frac{3}{7}$

.... equal parts

Activity 2 **Read, then solve:**

Nadia needs to cut her long bread equally among her 4 friends.

- Draw the number line that shows her how to cut her bread equally.

- What fraction of the bread does each friend get?

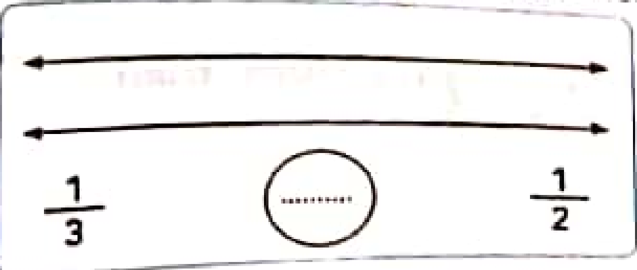
....

....

Activity 3

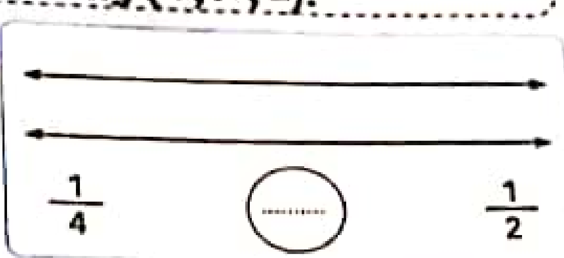
Use the number line to help you compare between fractions using (< , > , =):

a)



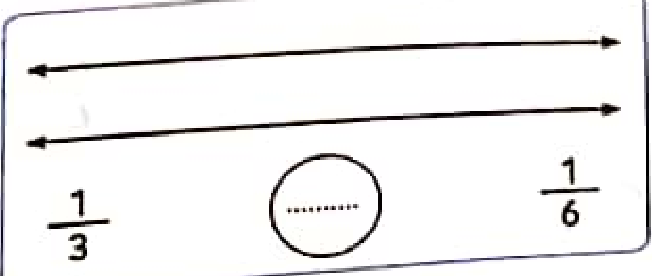
$\frac{1}{3}$ (........) $\frac{1}{2}$

b)



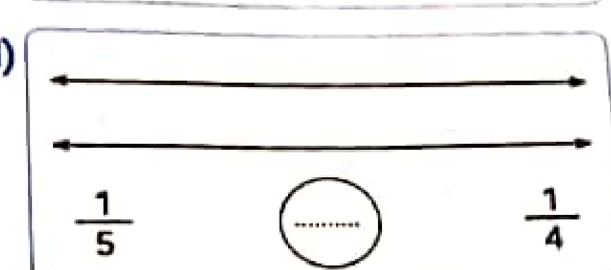
$\frac{1}{4}$ (........) $\frac{1}{2}$

c)



$\frac{1}{3}$ (........) $\frac{1}{6}$

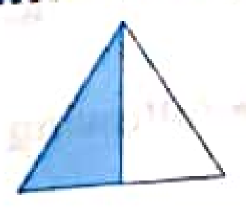
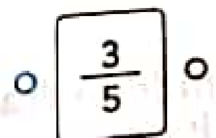
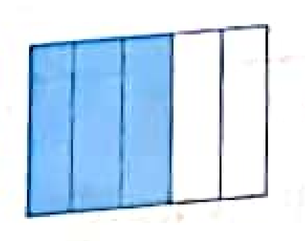
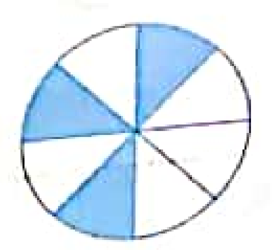
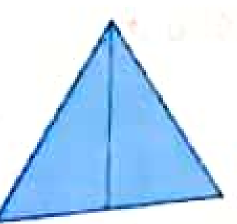
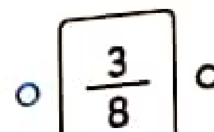
d)



$\frac{1}{5}$ (........) $\frac{1}{4}$

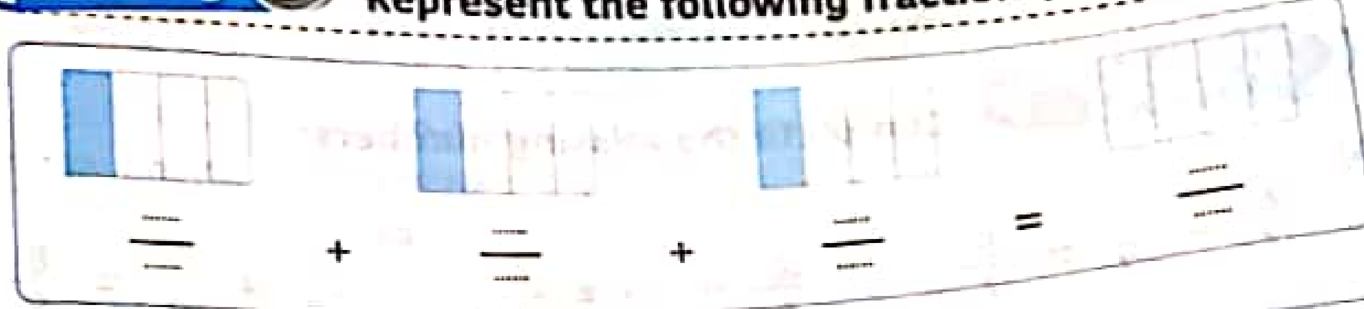
Activity 4

Match the shape with its fraction and name:

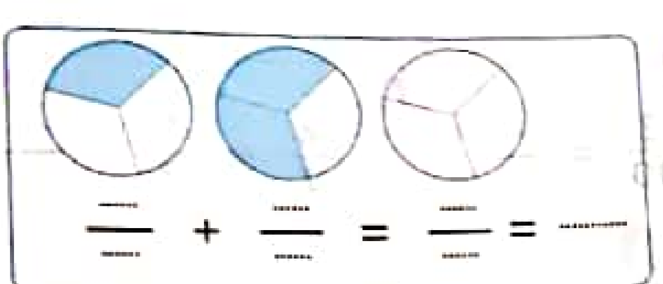
	Shape		Fraction		Name
a)		o	 o $\frac{3}{5}$ o	o	three fourths
b)		o	o $\frac{2}{2}$ o	o	three eighths
c)		o	o $\frac{3}{4}$ o	o	half
d)		o	o $\frac{1}{2}$ o	o	three fifths
e)		o	 o $\frac{3}{8}$ o	o	one whole

Activity 3 Represent the following fractions, then add:

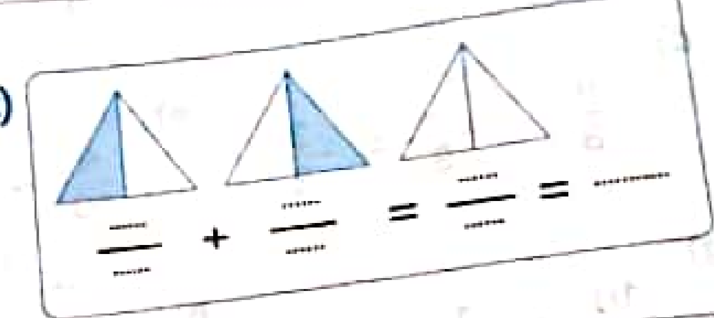
a)



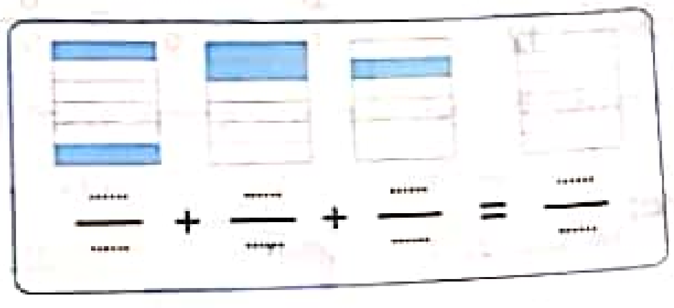
b)



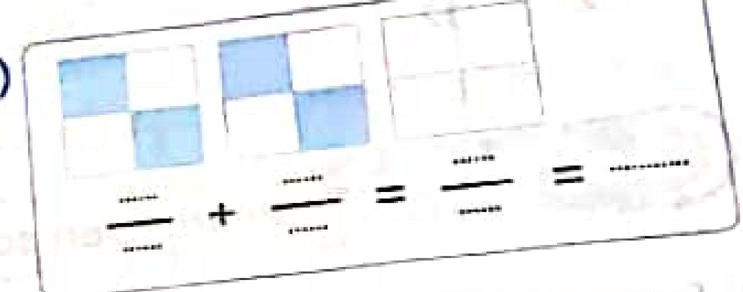
c)



d)



e)



Activity 4 Subtract the following fractions:

a) $\frac{8}{8} - \frac{2}{8} - \frac{1}{8} = \frac{\dots}{\dots}$

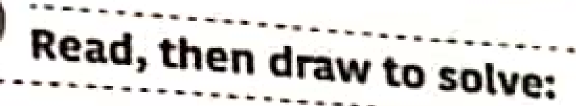
b) $\frac{5}{6} - \frac{4}{6} = \frac{\dots}{\dots}$

c) $\frac{3}{4} - \frac{1}{4} = \frac{\dots}{\dots}$

d) $\frac{9}{10} - \frac{5}{10} = \frac{\dots}{\dots}$

e) $\frac{4}{4} - \frac{1}{4} = \frac{\dots}{\dots}$

f) $\frac{5}{7} - \frac{2}{7} - \frac{1}{7} = \frac{\dots}{\dots}$



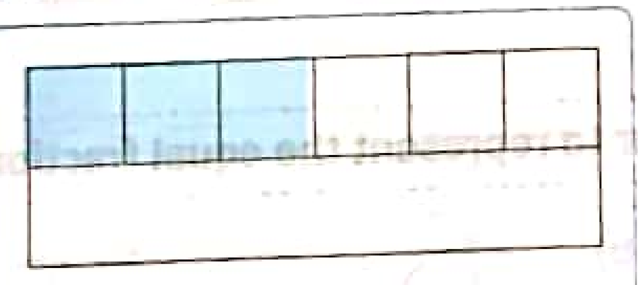
Read, then draw to solve:

Sally baked a big cake. She cut it into 8 equal pieces. She ate $\frac{1}{2}$ of the cake. Draw to represent the cake, then color the pieces she ate in pink.

$\frac{1}{2} = \frac{\dots}{\dots}$

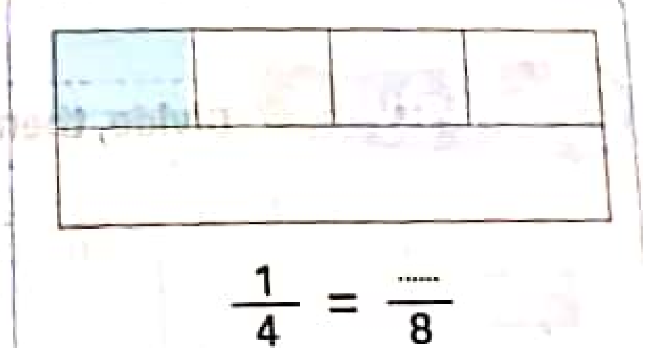
Activity 2 Divide the fraction strips to find the equivalent fractions:

a)



$\frac{3}{6} = \frac{\dots}{12}$

b)

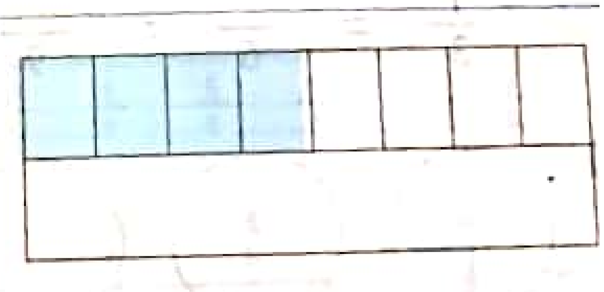


$\frac{1}{4} = \frac{\dots}{8}$

c)

$\frac{3}{5} = \frac{\dots}{10}$

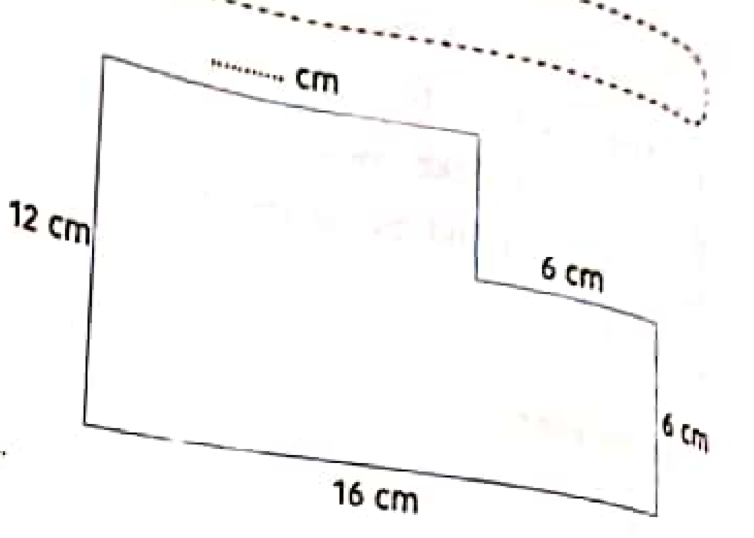
d)



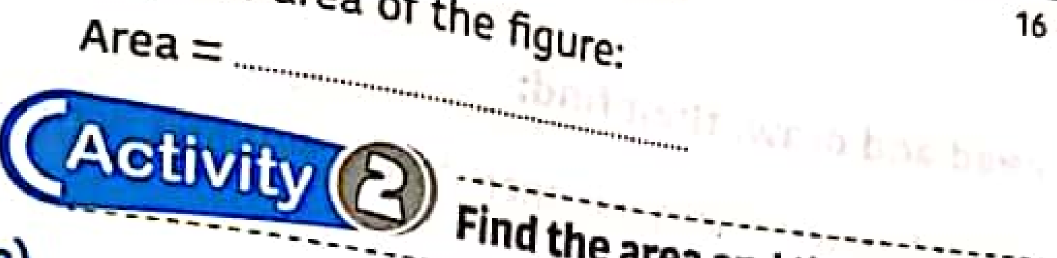
$\frac{4}{8} = \frac{\dots}{4}$

Activity 1 Read, then find:

Rahma put the two rectangles together to form an L-shaped figure:

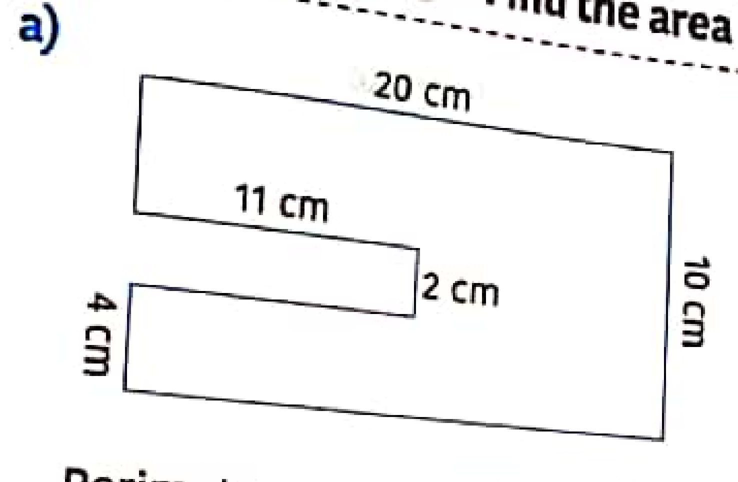


- Label the missing side.
- Find the perimeter of the figure:
  Perimeter = ...
- Find the area of the figure:
  Area = ...



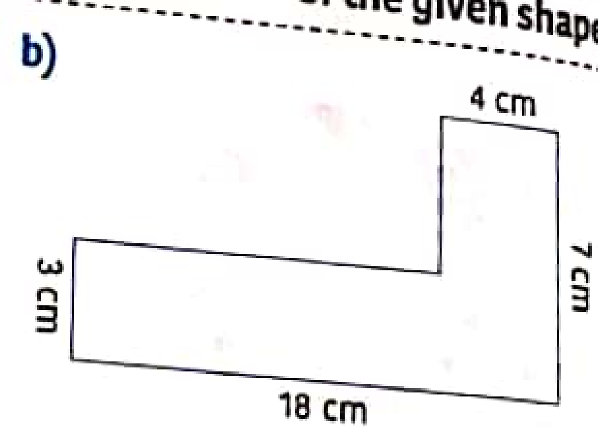
Activity 2 Find the area and the perimeter of the given shapes:

a)



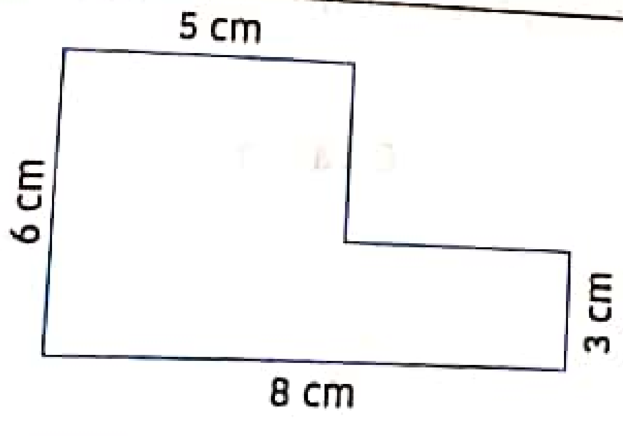
Perimeter = ...
Area = ...

b)



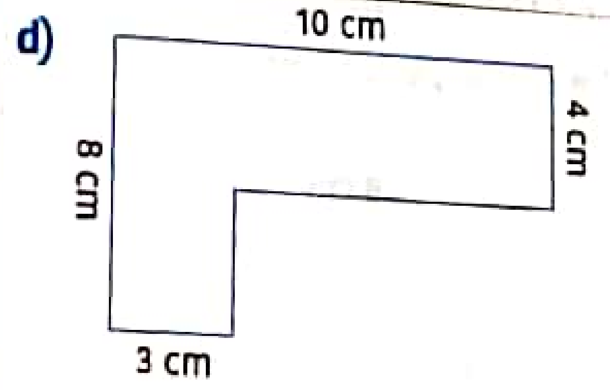
Perimeter = ...
Area = ...

c)

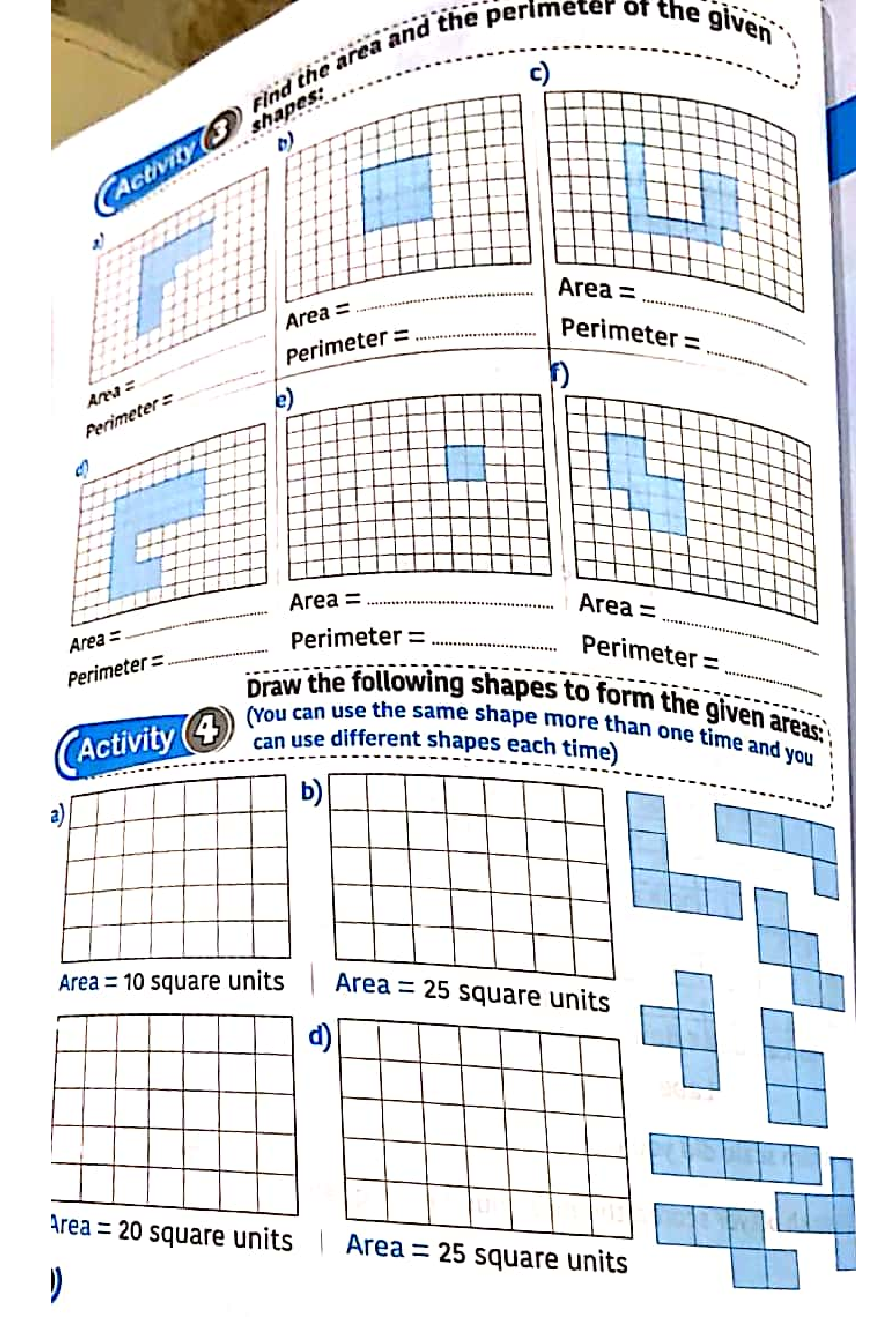


Perimeter = ...
Area = ...

d)



Perimeter = ...
Area = ...



Activity 3

Find the area and the perimeter of the given shapes:

a)

Area = ...

Perimeter = ...

b)

Area = ...

Perimeter = ...

c)

Area = ...

Perimeter = ...

d)

Area = ...

Perimeter = ...

e)

Area = ...

Perimeter = ...

f)

Area = ...

Perimeter = ...

Activity 4

Draw the following shapes to form the given areas:
(You can use the same shape more than one time and you can use different shapes each time)

a)

Area = 10 square units

b)

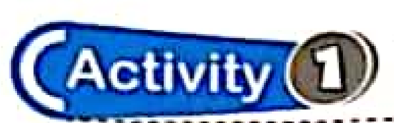
Area = 25 square units

Area = 20 square units

d)

Area = 25 square units

Sheet 3



Activity 1 Read, then solve:

a) What is your hypothesis for comparing between $\frac{2}{3}$, and $\frac{1}{3}$?

➤ Use a number line to prove your answer.

....

....

b) What is your hypothesis for comparing between $\frac{2}{5}$, and $\frac{2}{6}$?

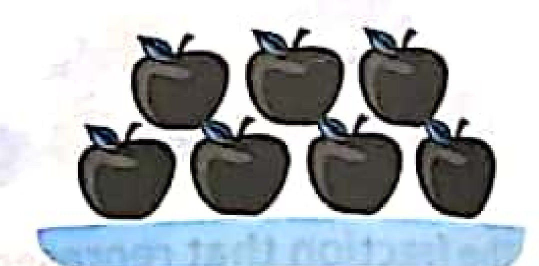
➤ Use a picture model to prove your answer.

....

....

Activity 2 Read, then solve:

a) Sondous had 7 apples. She ate 3 of them. What is the fraction of the left apples?



➤ The fraction of the left apples = $\frac{......}{......}$

b) Yassin had L.E. 10. He gave his brother L.E. 2, and his sister L.E. 3. What is the fraction of the left money with Yassin?

➤ The fraction of the left money = $\frac{......}{......} = \frac{......}{......}$

Activity 1 **Read and draw, then find:**

a)

- I am a rectangle.
- My area is 48 square units.
- My length is less than 10 and more than 7.

Perimeter = ... cm

b)

- I am a square.
- My area is 64 square units.

Side length = ... cm

Perimeter = ... cm

Activity 2 **Read, then solve:**

Sherif drew 3 identical rectangles, if the area of each one is 12 cm^2 and the length of one side is 4 cm.

- *Find the width of each rectangle:*

Width = ... cm

- *Find the total perimeter of the 3 rectangles:*

Total perimeter = ... cm

4 cm

Area =	....	cm^2

Find the total area of the 3 rectangles:

Total area = ... cm^2

Activity 3 Write the place value and value of the underlined digits:

a) 6 3 $\underline{0}$. 2 1 8

Place value = ...

Value = ...

b) 4 0 8 , 3 2 $\underline{6}$

Place value = ...

Value = ...

c) 3 $\underline{1}$ 1 , 5 2 6

Place value = ...

Value = ...

d) 3 1 9 , $\underline{0}$ 5 4

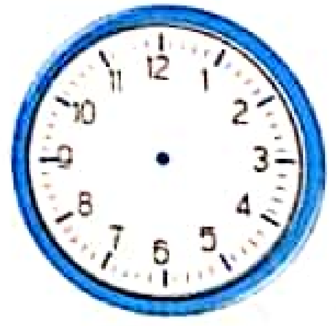
Place value = ...

Value = ...

Activity 4 Show the end time on the clocks by drawing the two hands:

Elapsed time:

20 minutes

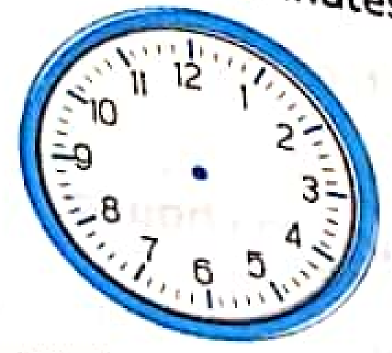


start time: 3:15

end time: ....

Elapsed time:

1 hour and 15 minutes



start time: 12:30

end time: ....

Elapsed time:

25 minutes

start time: 1:05

end time: ....

Elapsed time:

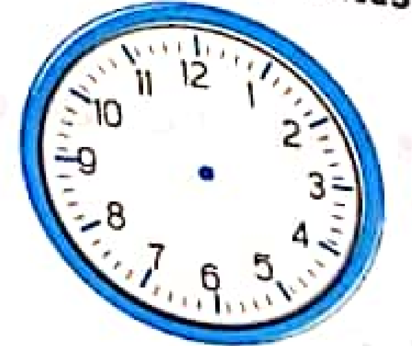
2 hours and 20 minutes

start time: 3:15

end time: ....

Elapsed time:

1 hour and 15 minutes



start time: 12:30

end time: ....

Elapsed time:

half an hour

start time: 1:05

end time: ....

Sheet 1

Activity 1 Choose the correct answer:

a) $1 - \frac{3}{8} =$ .... $(\frac{2}{8}, \frac{5}{8}, \frac{8}{8})$

b) The place value of 8 in 835109 is .... (80000, hundred thousand, thousand)

c) $\frac{1}{2}$ .... $\frac{1}{9}$ $(<, >, =)$

d) $64 \div$ .... $= 8$ (9, 4, 8)

e) 3:15 p.m was the starting time for Sajeda's training. She trained for 4 hours, and she finished at .... (7:15 p.m, 7:00 p.m, 8:15 p.m)

f) 82 thousands, 3 hundreds, 7 tens, 2 ones = ... (82372, 85072, 87302)

Activity 2 Draw as required each time:

a) A line with measurement $5\frac{1}{2}$ cm

b) A number line to show $\frac{1}{2}$

c) A picture model to represent $\frac{3}{8}$

d) A square with area 16 cm^2

Sheet 2

Activity 1 Find the following:

a) The length of the colored part = ... cm

b) The area of the shaded part = ... cm^2

Its perimeter = ... cm

c) $\frac{1}{2} = \frac{......}{4}$ on number line

d) $\frac{......}{......} + \frac{......}{......} = \frac{......}{......}$

e) Area = 15 cm^2 3 cm

Length = ... cm

Perimeter = ... cm

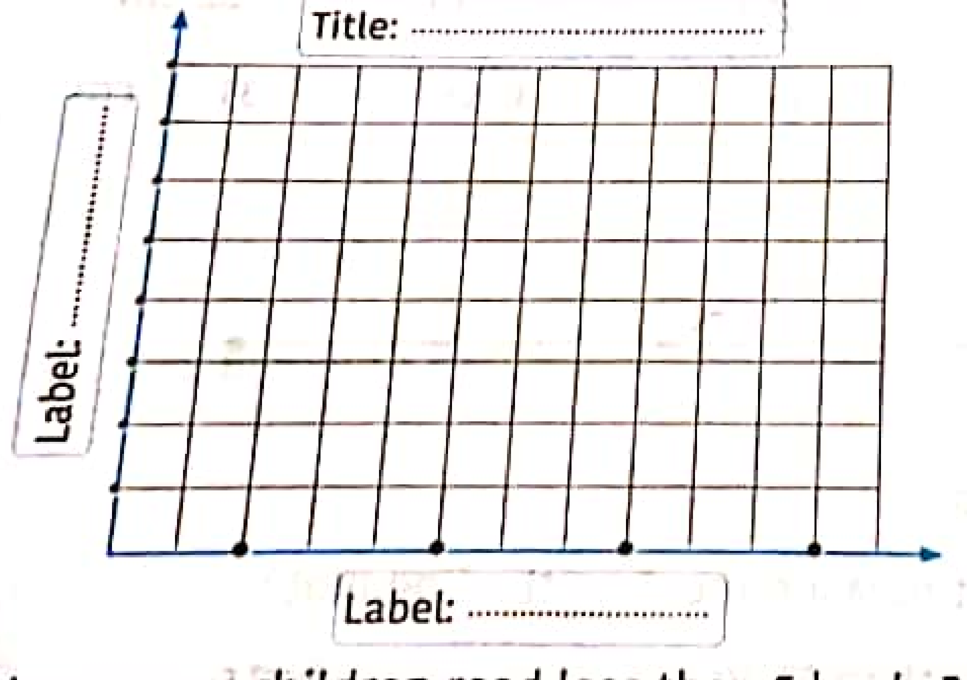
f)

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

$\frac{2}{6} = \frac{......}{12}$

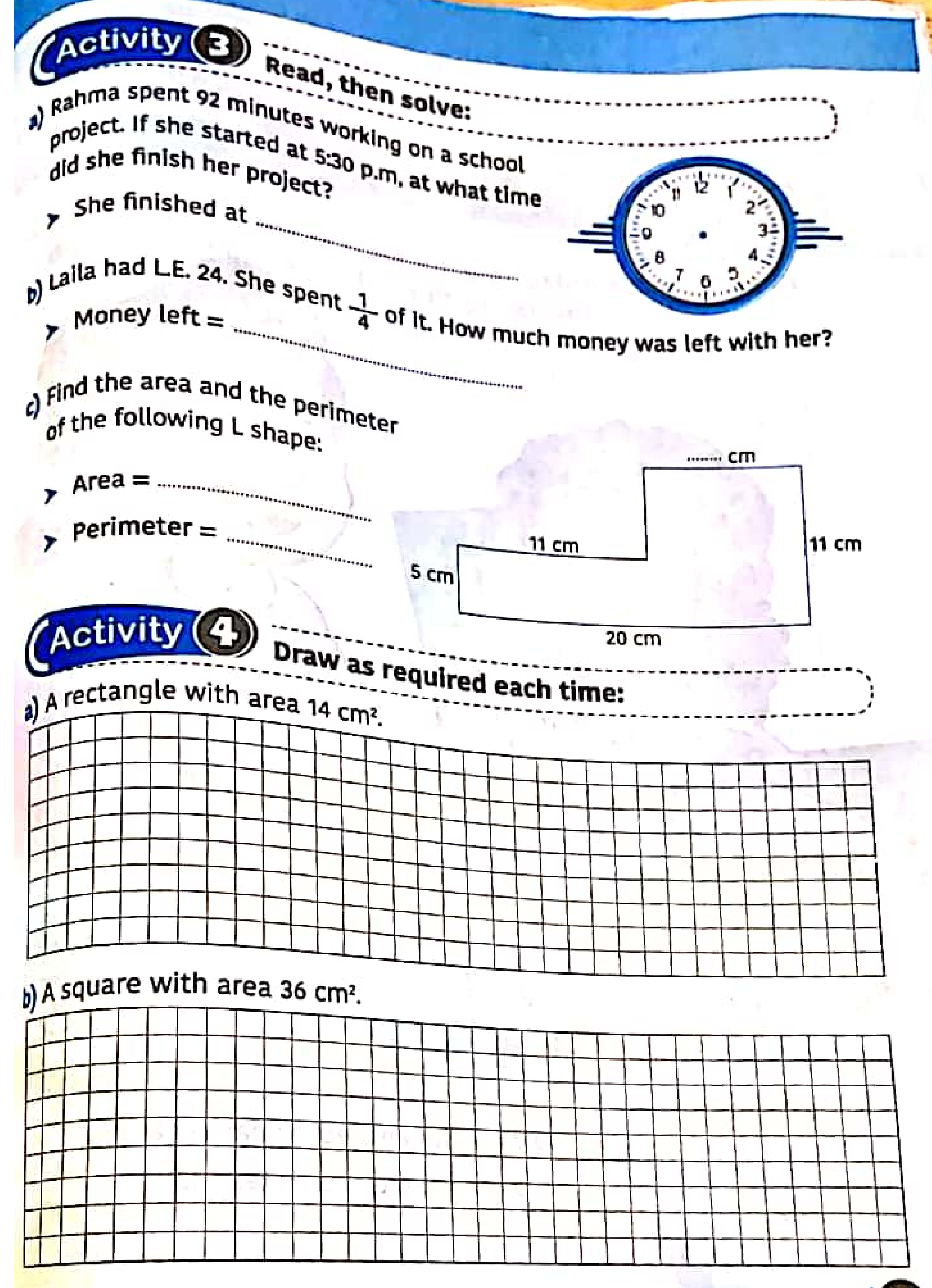
Activity 2 Form a bar graph to represent the following data:

The data show the number of books some children were reading during the week:



Children	Tallies
Noha	卌 ///
Menna	卌
Ahmed	////
Waleed	卌 /

How many children read less than 5 books? ....



Activity 3 Read, then solve:

a) Rahma spent 92 minutes working on a school project. If she started at 5:30 p.m, at what time did she finish her project?

➤ She finished at ....

b) Laila had L.E. 24. She spent $\frac{1}{4}$ of it. How much money was left with her?

➤ Money left = ...

c) Find the area and the perimeter of the following L shape:

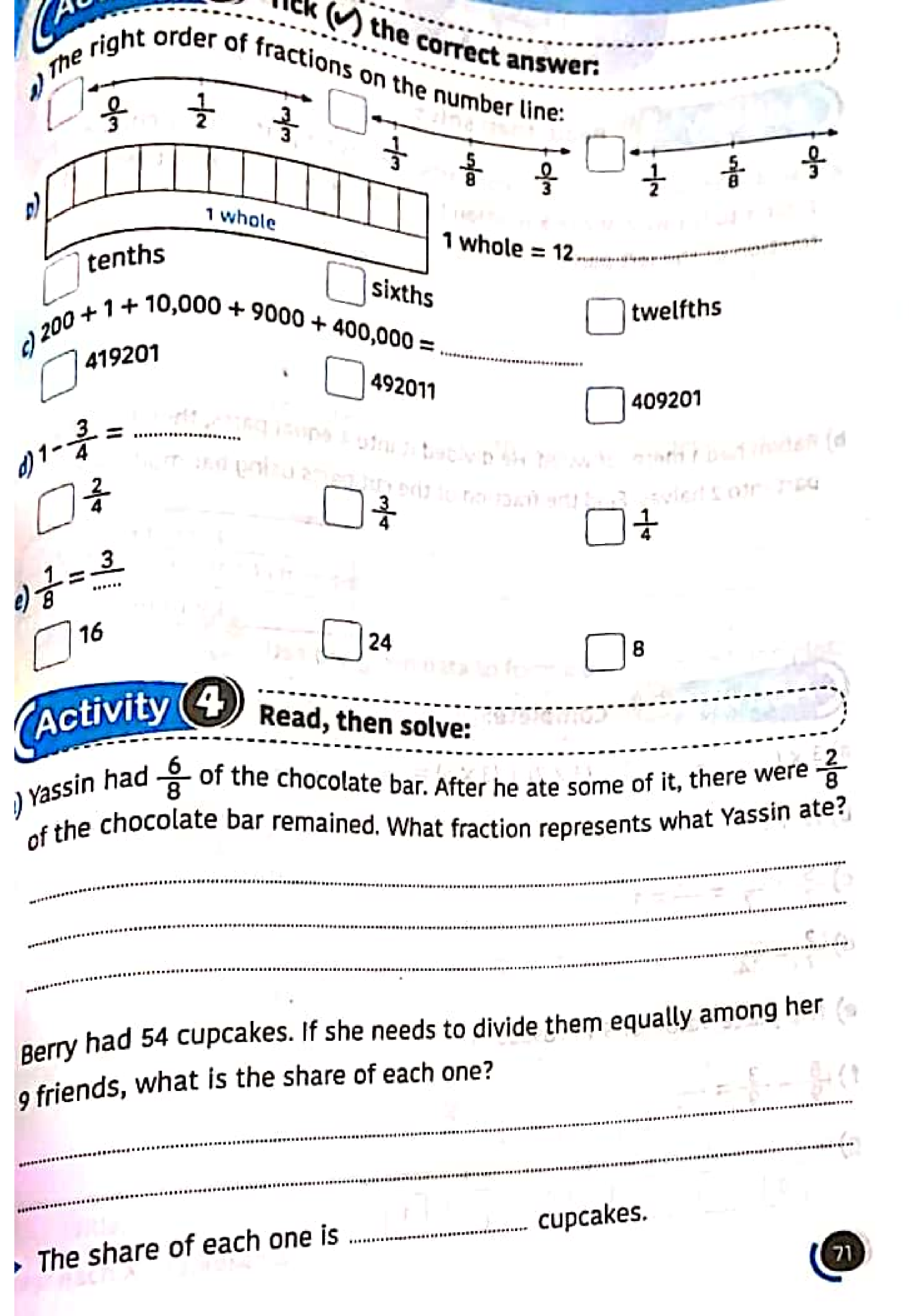
➤ Area = ...

➤ perimeter = ...

Activity 4 Draw as required each time:

a) A rectangle with area 14 cm².

b) A square with area 36 cm².



...ick (✓) the correct answer:

a) The right order of fractions on the number line:

☐ $\frac{0}{3}$ $\frac{1}{2}$ $\frac{3}{3}$ ☐ $\frac{1}{3}$ $\frac{5}{8}$ $\frac{0}{3}$ ☐ $\frac{1}{2}$ $\frac{5}{8}$ $\frac{0}{3}$

b)

1 whole

1 whole = 12 ....

☐ tenths ☐ sixths ☐ twelfths

c) $200 + 1 + 10{,}000 + 9000 + 400{,}000 =$ ....

☐ 419201 ☐ 492011 ☐ 409201

d) $1 - \frac{3}{4} =$ ....

☐ $\frac{2}{4}$ ☐ $\frac{3}{4}$ ☐ $\frac{1}{4}$

e) $\frac{1}{8} = \frac{3}{\ldots\ldots}$

☐ 16 ☐ 24 ☐ 8

Activity 4 Read, then solve:

) Yassin had $\frac{6}{8}$ of the chocolate bar. After he ate some of it, there were $\frac{2}{8}$ of the chocolate bar remained. What fraction represents what Yassin ate?

....

....

....

Berry had 54 cupcakes. If she needs to divide them equally among her 9 friends, what is the share of each one?

....

....

• The share of each one is .... cupcakes.

Activity 3 Choose the correct answer:

a) $\frac{4}{5} = \frac{\cdots}{10}$ (2, 4, 8)

b) 8 + 3000 + 200 + 50,000 = ... (5328, 50328, 53208)

c) There are .... equal parts in one whole. (9, 8, 1)

1 whole								

d) $\frac{6}{7} - \frac{\cdots}{\cdots} = \frac{2}{7}$ $(\frac{1}{7}, \frac{8}{7}, \frac{4}{7})$

e) $\frac{1}{8} = \frac{\cdots}{\cdots}$ $(\frac{3}{8}, \frac{2}{8}, \frac{2}{16})$

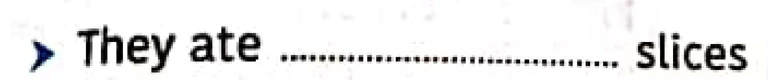
f) The smallest number which can be formed from (6, 0, 2, 1, 1, 4) is .... (201146, 101246, 110246)

Activity 4 Read, then solve:

a) Noura spent 92 minutes working on a school project. If she started at 3:30 a.m, at what time did she finish?

➤ The time she finished at is ....

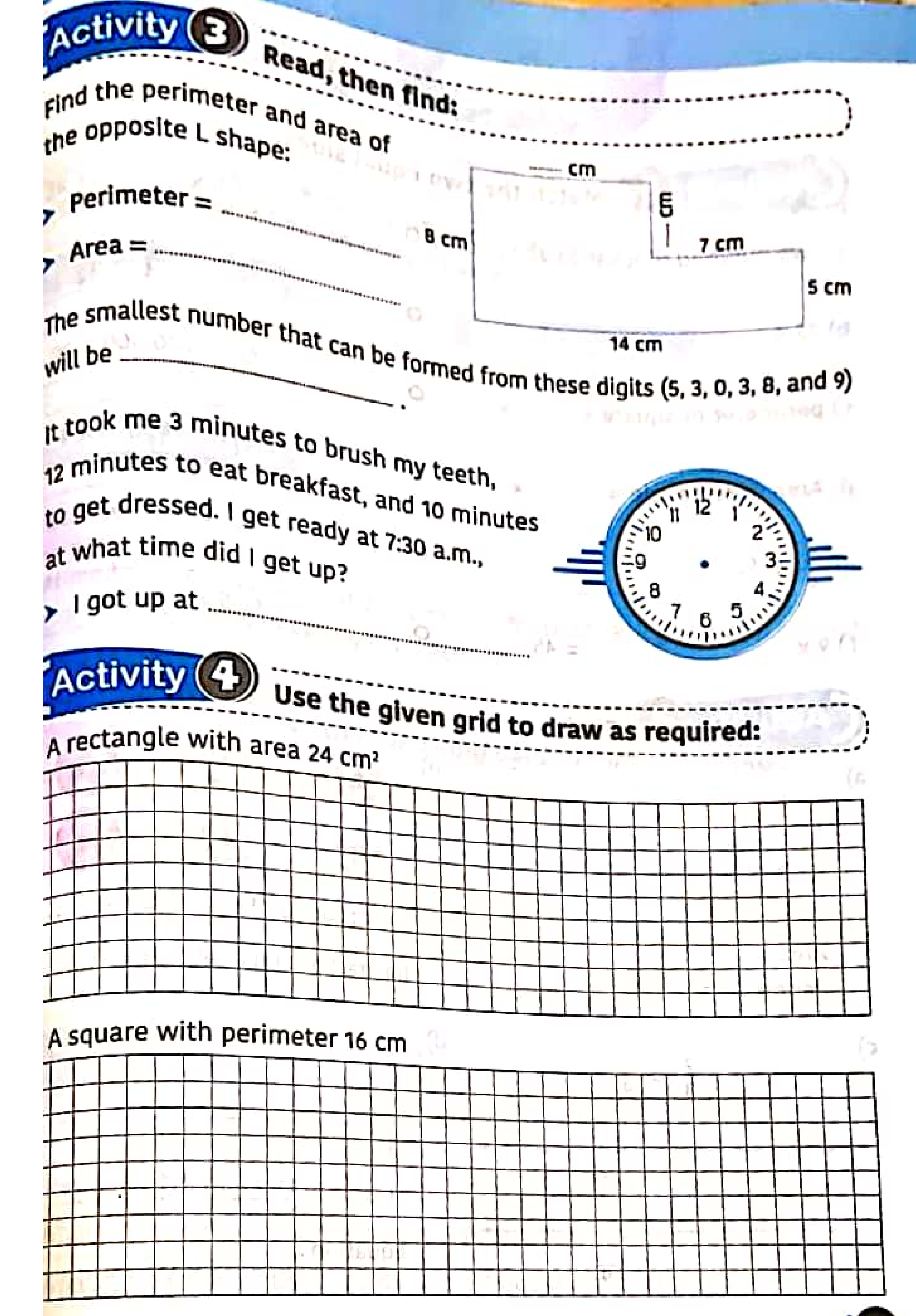
b) Rahma ate 3 slices of pizza. Karim ate 2 slices of the same pizza. If there were 8 slices of pizza in all, what fraction of pizza did they both eat? And what fraction of pizza remained?



➤ They ate .... slices

➤ The fraction of eaten pizza is ....

➤ The fraction of the remaining pizza is ....



Activity 3 Read, then find:

Find the perimeter and area of the opposite L shape:

- Perimeter = ...
- Area = ...

The smallest number that can be formed from these digits (5, 3, 0, 3, 8, and 9) will be ....

It took me 3 minutes to brush my teeth, 12 minutes to eat breakfast, and 10 minutes to get dressed. I get ready at 7:30 a.m., at what time did I get up?

- I got up at ....

Activity 4 Use the given grid to draw as required:

A rectangle with area 24 cm^2

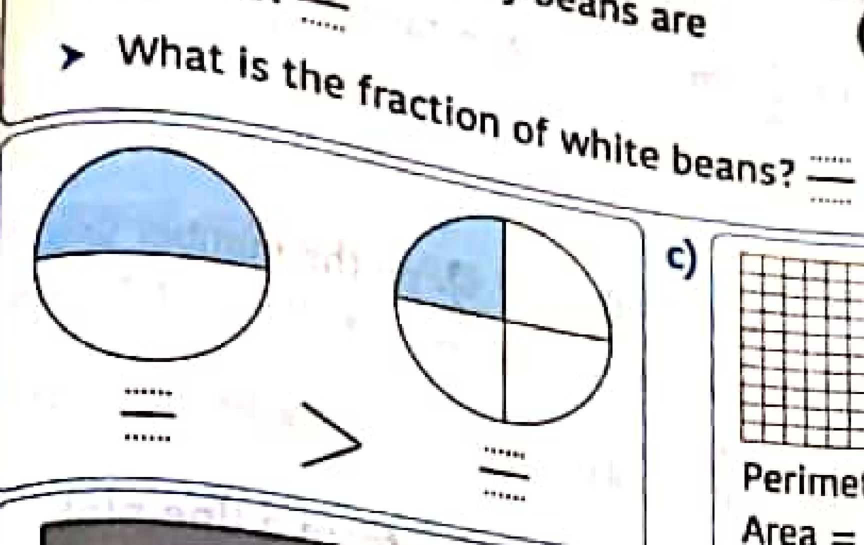
A square with perimeter 16 cm

Find the following:

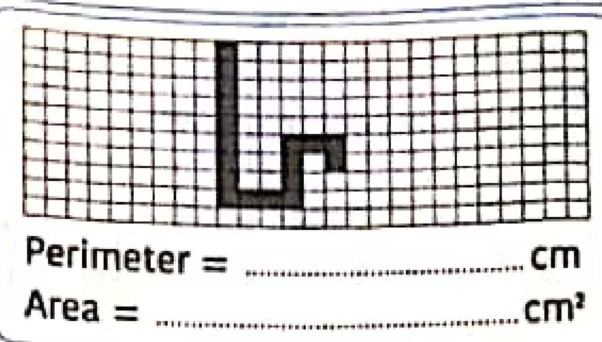
a) Here is a set of 7 jelly beans.

- What fraction of jelly beans are colored? $\frac{\cdots}{\cdots}$
- What is the fraction of white beans? $\frac{\cdots}{\cdots}$

b)



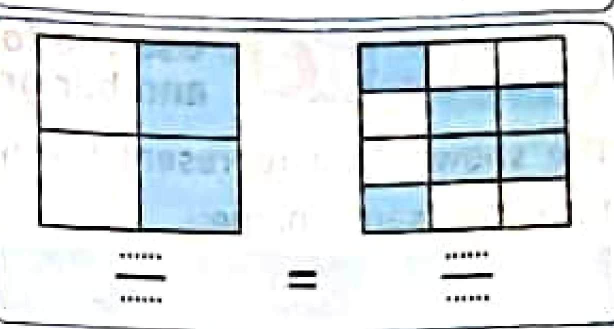
c)



Perimeter = ... cm

Area = ... cm²

d)



Length of colored part = ... cm

e)

$\frac{\cdots}{\cdots} = \frac{\cdots}{\cdots}$

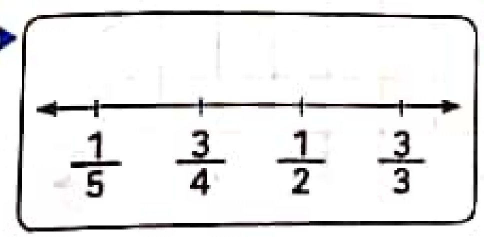
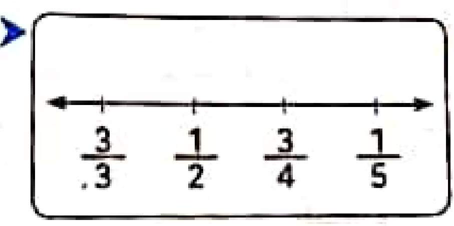
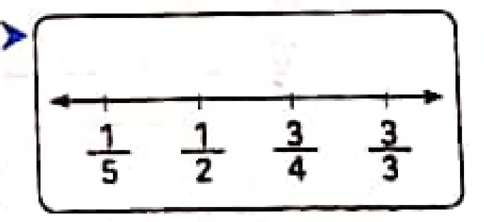
Activity 4 Choose the right answer:

a) Sixty thousand and nine = ... (600009, 60009, 6009)

b) Laila baked 24 cakes, she has 8 plates. If she wants to put 3 cakes in each plate, how many more plates does she need?

- $(24 \div 3) - 8$
  Divide: $24 \div 3 = 8$
  Subtract: $8 - 8 = 0$ plates
- $(8 \times 3) - 24$
  Mutiply: $8 \times 3 = 24$
  Subtract : $24 - 24 = 0$ plates

c) The right order of $\frac{1}{5}, \frac{1}{2}, \frac{3}{4}, \frac{3}{3}$ is:

- 
- 
- 

Sheet 7

Activity 1 Read, then solve:

a) Dad divided a pizza into 8 equal parts. He gave 4 parts to his children and 2 parts to his wife. Write a fraction to show the served parts, then find the fraction of the left parts.

....

....

....

b) Rahim had 1 meter of wood. He divided it into 4 equal parts, then he cut each part into 2 halves. Find the fraction of the cut parts using bar model strips.

....

....

....

1 whole

Activity 2 Complete:

a) 3 × (.......... + ...) = (3 × 2) + (3 × 5) = ...

b) 72 ÷ .... = 9

c) $\frac{5}{7} + \frac{\cdots}{7} = \frac{\cdots}{\cdots} = 1$

d) $\frac{2}{7} = \frac{\cdots}{14}$

e) The place value of 9 in 789325 is ....

f) $\frac{8}{9} - \frac{3}{9} = \frac{\cdots}{\cdots}$

g) Number line: 0, ..., ..., ..., ..., ..., 1

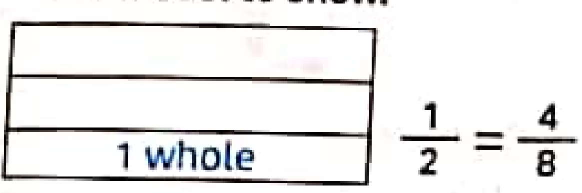
Sheet 5

Activity 1 Draw:

a) Red line with a length $6\frac{1}{2}$ cm

b) A rectangle with area 24 cm²

c) A bar model to show:



$\frac{1}{2} = \frac{4}{8}$

d) $\frac{3}{6}$ on the number line

Activity 2 Use the following data to form a line plot and bar graph:

The shown data represent the number of students in Akram's class who have the same name:

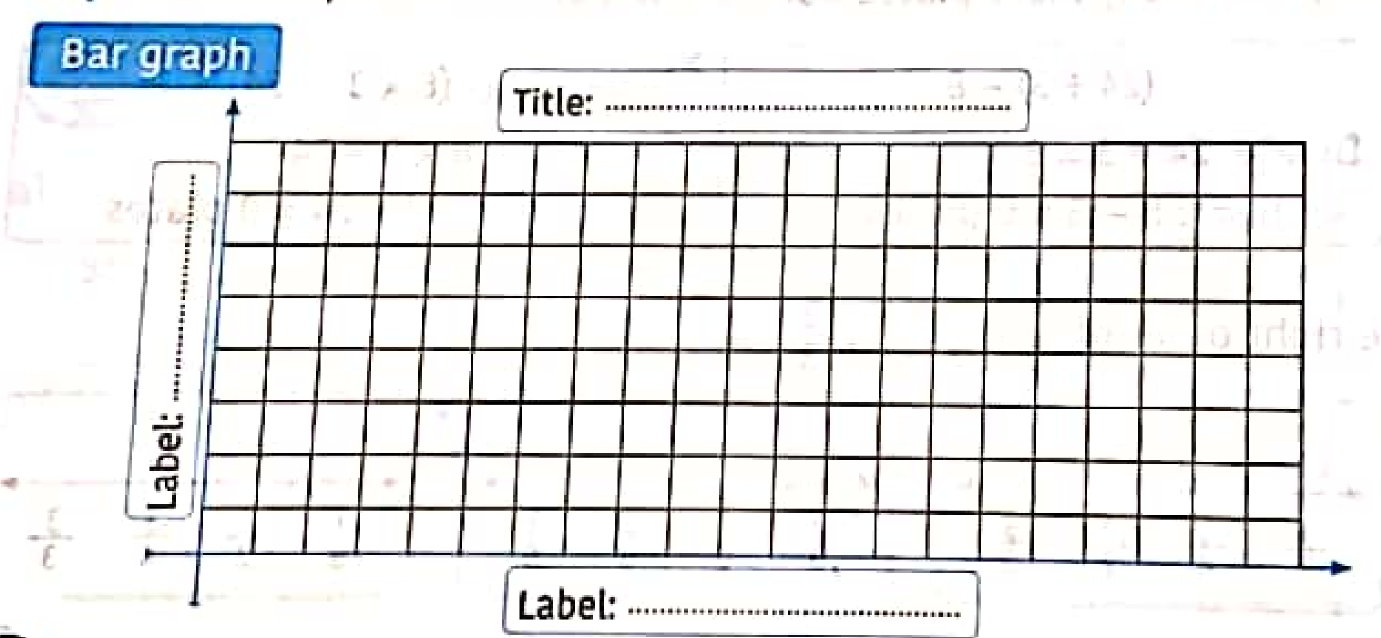
Name	Number of children
Ahmed	4 students
Mai	3 students
Mohamed	5 students
Marwa	2 students

Line plot

Title: ....

Key: each X'S represents ....

Bar graph



Sheet 3

Activity 1 Complete:

a) Area of rectangle = ... × .... while area of square = ... × ....

b) I started eating lunch at two and half o'clock. It took me 20 minutes to finish, so I finished at .... o'clock.

c) $\frac{4}{6} = \frac{\dots}{18}$, $\frac{2}{7} = \frac{6}{\dots}$

d) Three hundred eighty thousand and one = ...

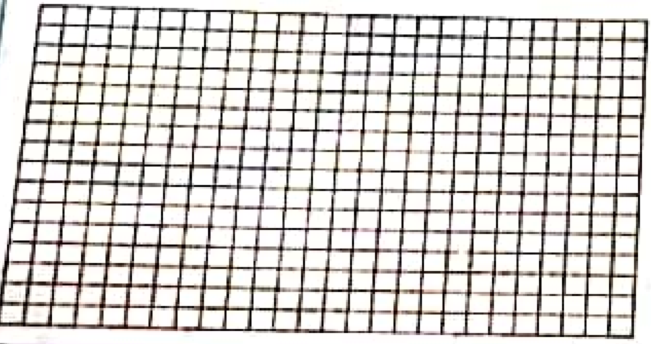
e) $\frac{2}{8} + \frac{\dots}{8} = \frac{4}{8}$

f) The shaded parts are $\frac{\dots}{\dots}$ and they are read as ....

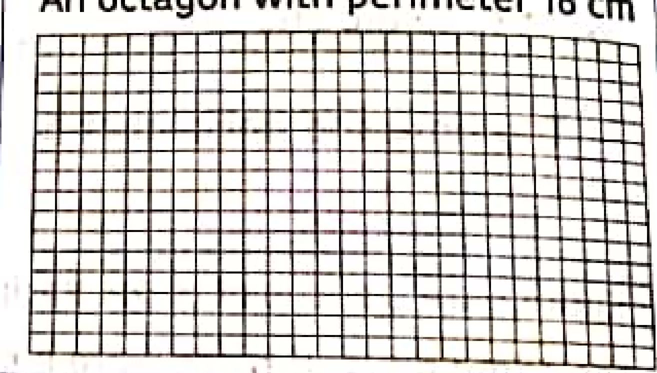
g) The value of 0 in 302198 is ...., while the place value is ....

Activity 2 Draw to represent the following:

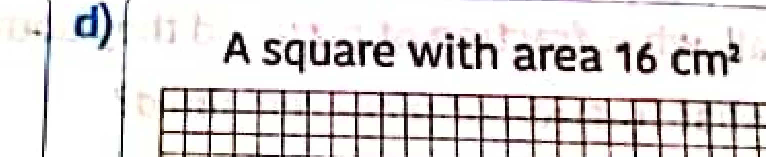
a) A rectangle with area 24 cm²



b) An octagon with perimeter 16 cm



c) $\frac{3}{8}$ on the number line



d) A square with area 16 cm²

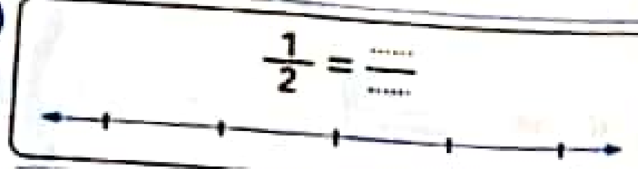
Sheet 6

Activity 1 Find the missing numbers:

a) $\frac{1}{2} = \frac{....}{4} = \frac{3}{....} = \frac{....}{8}$

b) 900 000 + ... + 200 + 50 = 983250

c) $\frac{1}{2} = \frac{....}{....}$



d) $\frac{8}{9} - \frac{2}{9} = \frac{....}{....}$

e) $6 \times (2 \times 5) = (6 \times ....) \times 5$

...... × ...... = ... × ......

.... = ...

f) $2 \times 6 = 2 \times (3 + ...)$

= .... + ... = ...

g) $\frac{3}{6} + \frac{1}{6} = \frac{....}{....}$

h)

24					

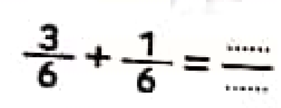
24 ÷ .... = ...

i) 9 × .... = 36

j) six fours = 6 × (.......... + 1)

Activity 2 Find the following:

a)



2 cm

Perimeter = 20 cm

L = ... cm

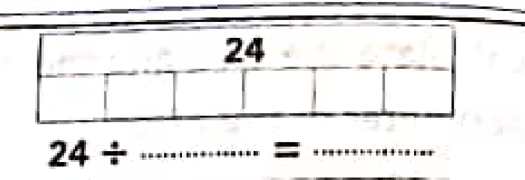
b)

Area = 9cm²

Side length = ... cm

Perimeter = ... cm

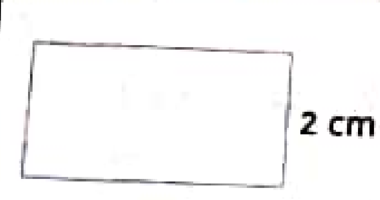
c)



04:00 ..... : .....

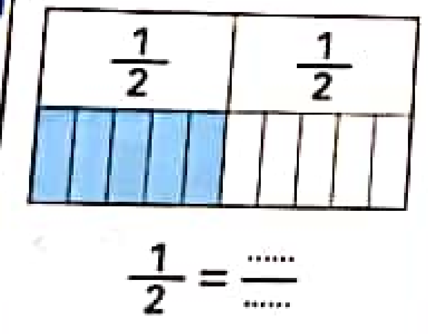
Elapsed time is 3 hours and 5 minutes

d)

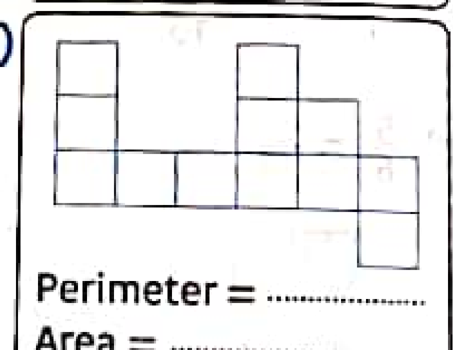


$\frac{1}{2} = \frac{....}{....}$

e) $\frac{2}{4} = \frac{....}{....}$

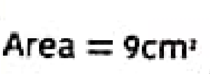


f)



Perimeter = ...

Area = ...



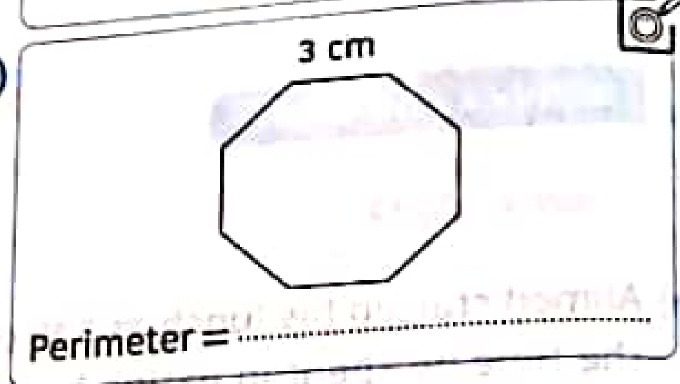
Sheet 10

Activity 1 Find the following:

a)

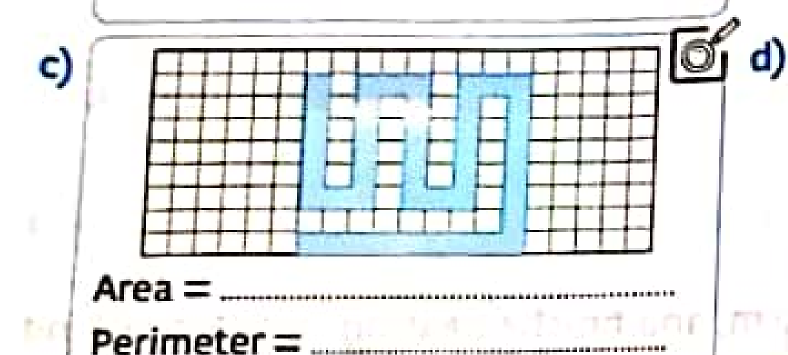
Starting time	Ending time	Elapsed time
10 : 40 a.m	02 : 16 p.m	....

b)



Length = ... cm

c)



Area = ...

Perimeter = ...

d)

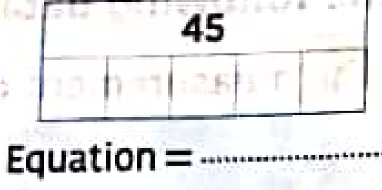
3 cm

Perimeter = ...

Activity 2 Complete:

a) $\frac{3}{5} = \frac{24}{\ldots}$

b)



Equation = ...

c) $3 \times 2 \times 5 =$ ....

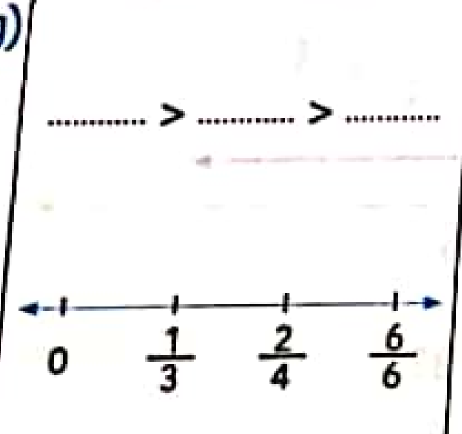
d) 500,000 + 400 + 40

= ....

e) $\frac{4}{8} + \frac{\ldots}{8} = \frac{7}{8}$

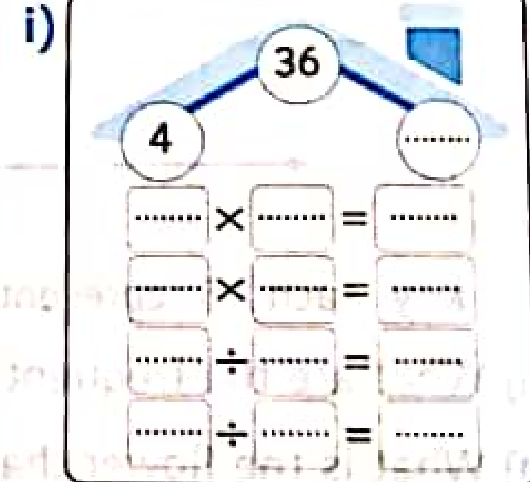
f) $\frac{9}{9} - \frac{4}{9} = \frac{\ldots}{\ldots}$

g) .... > .... > ....



h) The value of 8 in 839562 is ....

i)

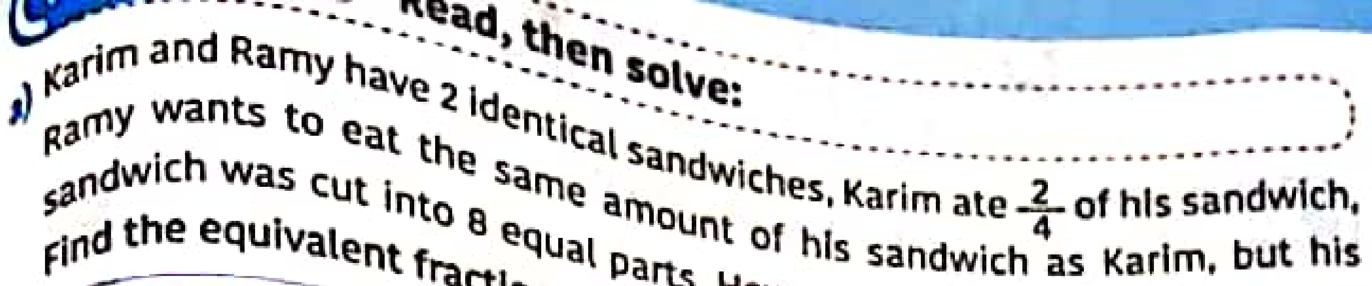


.... × .... = ...

.... × .... = ...

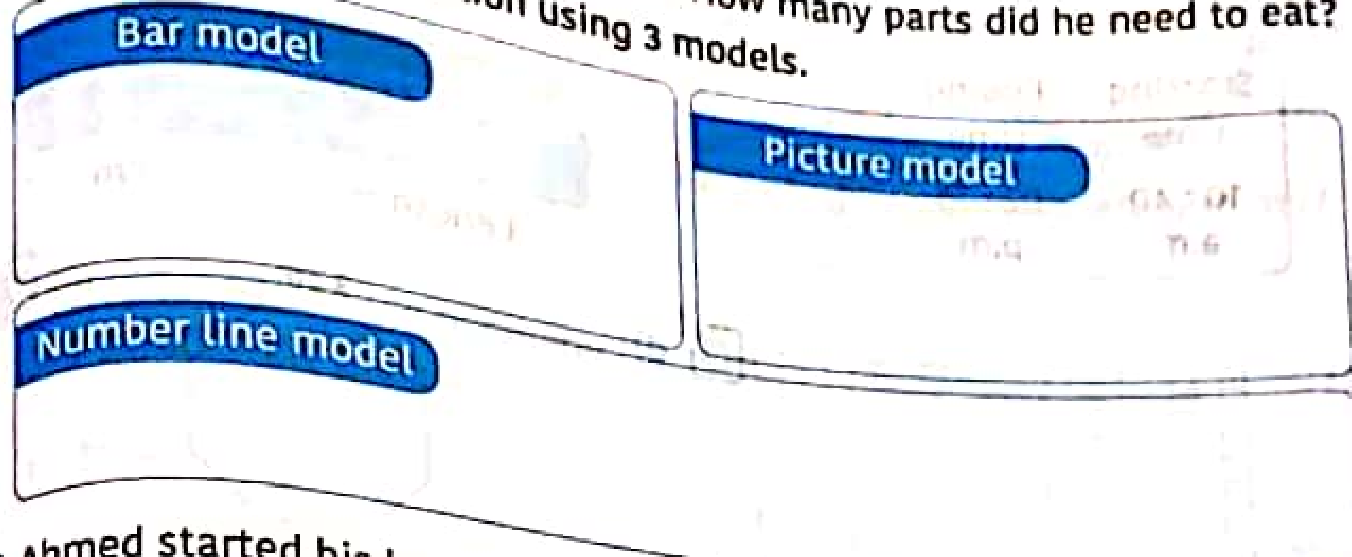
.... ÷ .... = ...

.... ÷ .... = ...



Read, then solve:

a) Karim and Ramy have 2 identical sandwiches, Karim ate $\frac{2}{4}$ of his sandwich, Ramy wants to eat the same amount of his sandwich as Karim, but his sandwich was cut into 8 equal parts. How many parts did he need to eat? Find the equivalent fraction using 3 models.



b) Ahmed started his lunch at 2:15 p.m, and finished eating at 4:45 p.m. Find the time he spent in eating his lunch.

....

Activity 4

Use the following data to form a line plot:

The data in the table show the measurement of some flowers:

Flowers	Measurement		
Red	$7\frac{1}{2}$ cm	8 cm	9 cm
Blue	$9\frac{1}{2}$ cm	$8\frac{1}{2}$ cm	7 cm
White	8 cm	8 cm	7 cm

Title: ....

Key: each X'S represents ....

a) What are the frequent measurements less than 8? ....

b) What is the flower that has the most frequency? ....

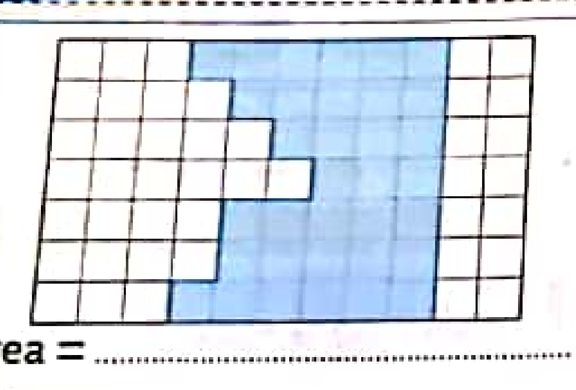
Sheet 9

Activity 1 Match the two equal sides:

a) Two hundred thousands and twenty	$5 \times$ .... $= 45$
b) $35 \div$ .... $= 5$	$\frac{2}{4} = \frac{....}{12}$
c) perimeter of square = ... ×	200,000 + 20
d) Area of rectangle = ... ×	Length × 4
e) $\frac{3}{6} = \frac{6}{....}$	Length × width
f) $9 \times$ .... $= 45$	$5 \times 7 =$ ....

Activity 2 Find:

a)



Area = ...

Perimeter = ...

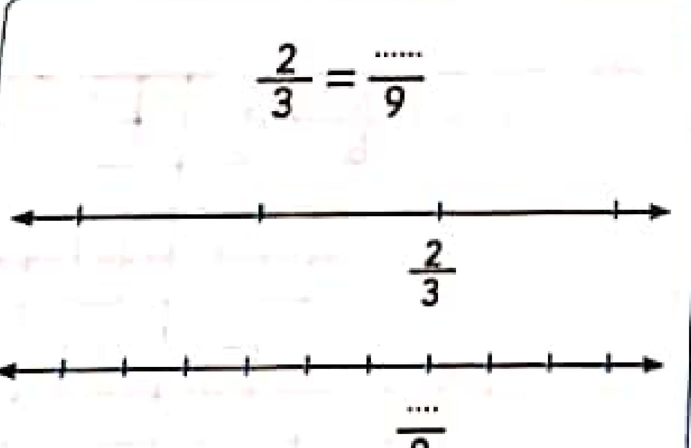
b)

The fraction of the set of big balls = $\frac{....}{....}$

The fraction of the set of small balls $\frac{....}{....}$

c)

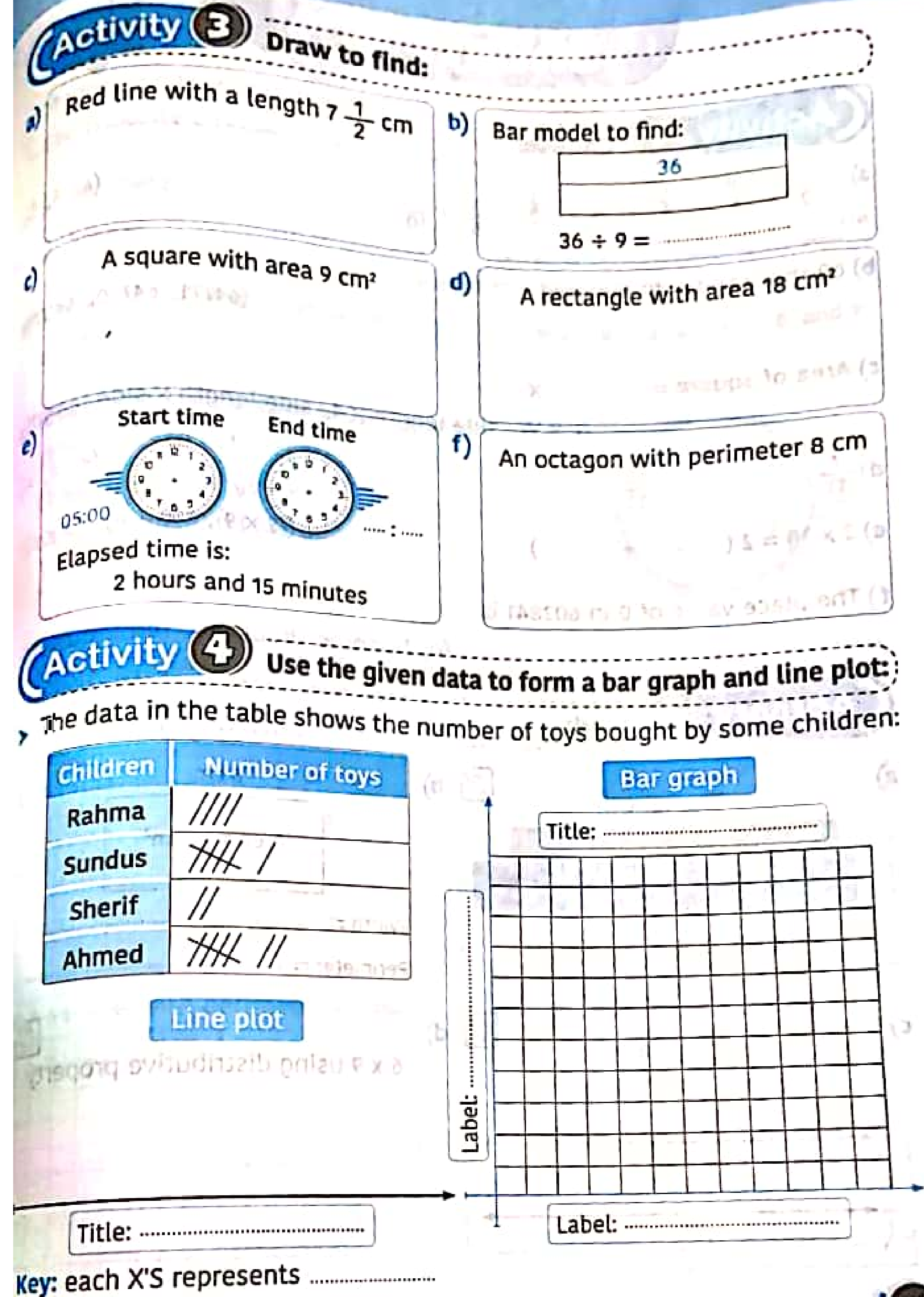
$\frac{2}{3} = \frac{....}{9}$



d)

27		

Equation = ...



Activity 3 Draw to find:

a) Red line with a length $7\frac{1}{2}$ cm

b) Bar model to find:

36

$36 \div 9 =$ ....

c) A square with area 9 cm^2

d) A rectangle with area 18 cm^2

e) Start time End time

05:00 ..... : .....

Elapsed time is:
2 hours and 15 minutes

f) An octagon with perimeter 8 cm

Activity 4 Use the given data to form a bar graph and line plot:

› The data in the table shows the number of toys bought by some children:

Children	Number of toys
Rahma	////
Sundus	𝍸 /
Sherif	//
Ahmed	𝍸 //

Line plot

Title: ....

Key: each X'S represents ....

Bar graph

Title: ....

Label: ....

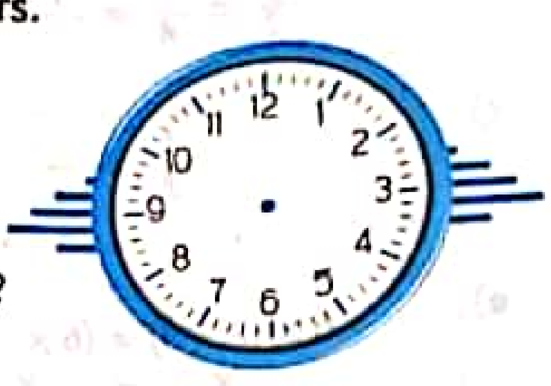
Label: ....

Activity 3 Read, then solve:

a) Lalla walks $\frac{7}{10}$ kilometer every day to school. One day she walked $\frac{3}{10}$ kilometer only. Find how many kms does she need to reach school.

- She needs to walk more .... kilometers.

b) Sara spent 40 minutes solving math homework and 20 minutes for reading. If she finished at 9 o'clock, at what time did she start?



- She started at: .... o'clock.

c) Calculate the area and the perimeter of the given L shape:

12 cm
3 cm
10 cm
7 cm

- Area = ... cm^2
- Perimeter = ... cm

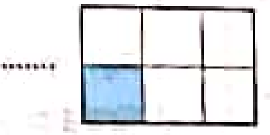
Activity 4 Choose the right answer:

a) $2 \times 5 \times 6 =$ .... $(2 \times 25,\ 2 \times 30,\ 6 \times 12)$

b) Area of a rectangle = ... X .... $(L \times W,\ L + W,\ P + L)$

c) $\frac{9}{10} - \frac{\dots}{\dots} = \frac{3}{10}$ $(\frac{10}{10},\ \frac{6}{10},\ \frac{3}{10})$

d) $\frac{5}{6} = \frac{\dots}{12}$ (10, 12, 5)

e)  .... (<, >, =)

Activity 3

Read, then solve:

a) Nabila bought 24 pieces of caramel candy, then her friends gave her 12 more. She ate 3 of them. How many pieces of caramel candy were left with her?

....

....

Pieces of caramel candies left = ...

Equation: ....

b) Wael is working as a carpenter, he has a long piece of wood and he cut it into 6 equal parts, then he cut each part of the 6 parts into 2 halves. How many parts does he have now? Draw to show your work.

....

....

He has .... parts

1 whole

Activity 4

Use the following measurements to form a line plot:

Shirts	Measurements			
Red shirts	30 cm	$30\frac{1}{2}$ cm	31 cm	34 cm
Blue shirts	31 cm	$33\frac{1}{2}$ cm	34 cm	32 cm
Green shirts	$33\frac{1}{2}$ cm	31 cm	32 cm	$31\frac{1}{2}$ cm

Title: ....

Key: each X'S represents ....

What is the most frequent measurement on the line plot? ....

How many shirts are more than 31 cm? .... shirts.

Sheet 8

Activity 1 Choose:

a)

$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$	

$\frac{3}{5} = \frac{\cdots}{10}$ (6, 4, 5)

b) 60 thousand + 40 hundred + 71 tens = ... (64771, 64710, 64071)

c) Area of square = ... × .... ($L \times W$, side length × 4, side length × side length)

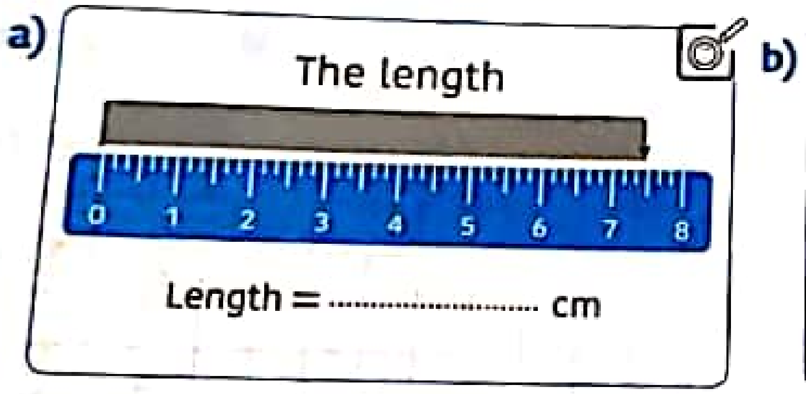
d) $\frac{7}{11}$ .... $\frac{10}{11}$ (<, >, =)

e) $2 \times 18 = 2$ (.............. + ...) ((2×9), $(10 + 8)$, (3×6))

f) The place value of 0 in 603841 is .... (0, hundred thousand, ten thousand)

Activity 2 Find:

a) The length



Length = ... cm

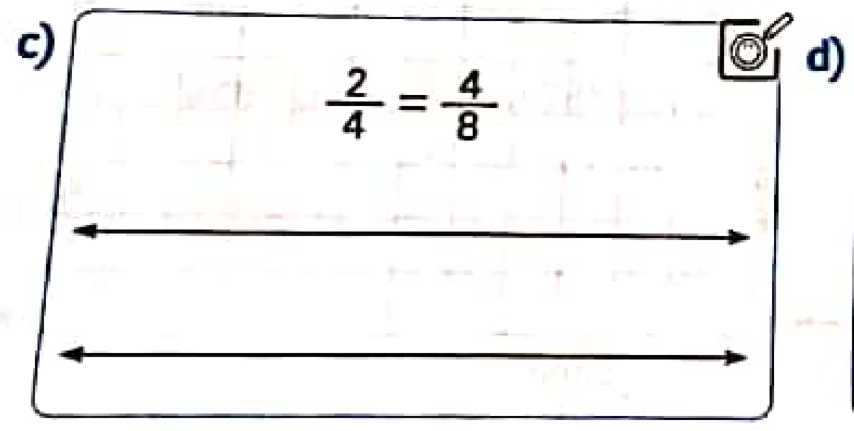
b) 6 cm

Area = 12 cm²

Width = ...

Perimeter = ...

c) $\frac{2}{4} = \frac{4}{8}$



d) 6 x 9 using distributive property

Sheet 4

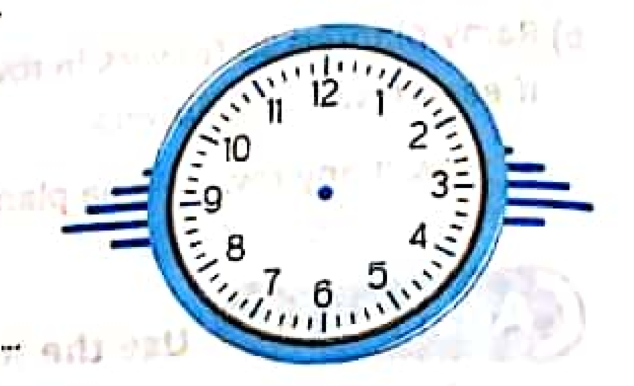
Activity 1 Read, then solve:

a) Nesreen had water colors. She said only half of the colors are remaining. Do you agree with her?

....

....

b) Anwar used his phone for 50 minutes. If he finished at 2:45. At which time did he begin?



➤ Start time: ....

c) Sally and Sherif had 2 identical cakes. If Sally ate $\frac{2}{8}$ of her cake and Sherif ate $\frac{2}{4}$ of his cake. Who ate the larger part?

$\frac{\dots}{\dots} > \frac{\dots}{\dots}$

➤ .... ate the larger part from his/her cake.

Activity 2 Complete:

a) $36 \div$ .... $= 6$

b) $\frac{1}{8} = \frac{\dots}{24}$

c) $\frac{3}{8} > \frac{\dots}{8}$

d) .... $\times 9 = 36$

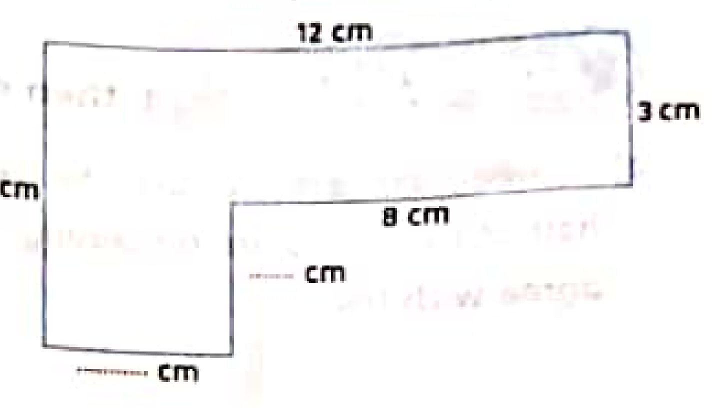
e) $\frac{2}{7} + \frac{\dots}{7} = 1$

f) $3 \times (7 \times 2) = (3 \times \dots)$
$=$ ....

Activity 3

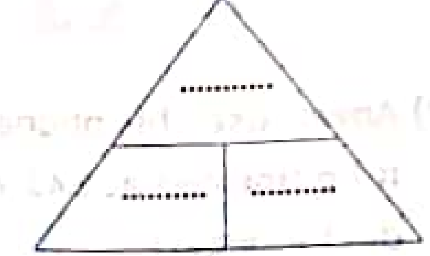
Read, then solve:

a) Remas draws two rectangles to form the opposite L-shaped figure:



- Write the missing sides:
  ....cm, ...cm
- Find the perimeter of the figure:
  The perimeter = ...
- Find the area of the figure:
  The area = ...

b) Ramy planted 30 flowers in rows. If each row has 6 flowers.



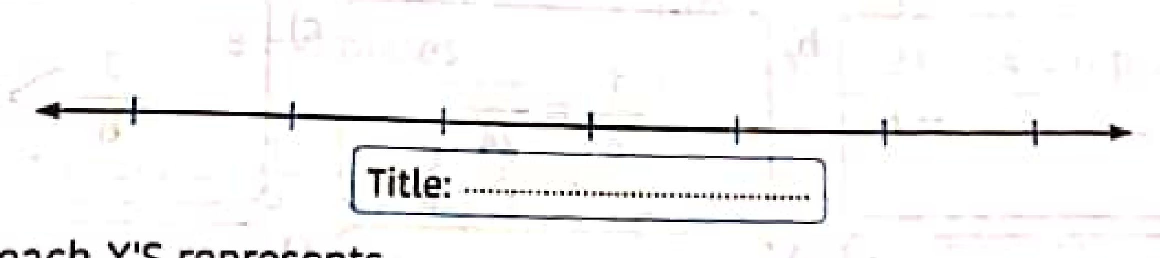
- How many rows did he plant?
  The number of rows = ... rows

Activity 4

Use the following data to form line plot:

These data show the number of hours some children spend in studying:

Children	Studying hours		
Mariam	$2\frac{1}{2}$ hours	4 hours	3 hours
Malak	$3\frac{1}{2}$ hours	5 hours	$2\frac{1}{2}$ hours
Ayman	4 hours	$2\frac{1}{2}$ hours	3 hours
Karam	2 hours	5 hours	$3\frac{1}{2}$ hours



Key: each X'S represents ....

What is the most frequent time on the line plot? ....

How many children studied more than 3 hours? .... children.